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View of Riser Creek in the Washburn Allotment, Photograph by Jonathan Sheeler

Ten Year Grazing Permit Renewal – Washburn Allotment

Preliminary Environmental Assessment NV-020-07-EA-03

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U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WINNEMUCCA FIELD OFFICE

ENVIRONMENTAL ASSESSMENT OF A TEN YEAR GRAZING PERMIT RENEWAL – WASHBURN ALLOTMENT

EA Number: NV-020-07-EA-03

1.0 INTRODUCTION

This Environmental Assessment (EA) contains the site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA ensures compliance with the National Environmental Policy Act (NEPA), analyzes information to determine whether to prepare an Environmental Impact Statement (EIS) or issue a "Finding of No Significant Impact" (FONSI). A FONSI documents why implementation of the selected action would not result in environmental impacts that would significantly affect the quality of the human environment.

1.1 Purpose and Need

The purpose of the proposed action is to implement a livestock grazing system on the Washburn Allotment that will meet the Standards for Rangeland Health (SRH) or make significant progress toward meeting the SRH and the multiple use objectives established for the Washburn Allotment in order to issue a ten year livestock grazing permit. The need for the Proposed Action is to issue a ten year livestock grazing permit with terms and conditions that reflect the livestock grazing system developed to meet the SRH and multiple use objectives.

A temporary term grazing permit has been issued for the period of March 1, 2005 to February 28, 2015 in accordance with Sec. 325, Title III, H.R. 2691, Department of the Interior and Related Agencies Appropriations Act, 2004 (P.L. 108-108), which was enacted on November 10, 2003, states: This grazing permit or lease is renewed under Section 402 of the Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1752), Title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1010 et seq.), or , if applicable, section 510 of the California Desert Protection Act (16 U.S.C. 410aaa-50). In accordance with Public Law 108-108 the terms and conditions contained in the expired or transferred permit or lease have been incorporated into this permit or lease and shall continue in effect under the renewed permit or lease until such time as the Secretary of the Interior completes processing of this permit or lease in compliance with all applicable laws and regulations, at which time this permit or lease may be canceled, suspended, or modified, in whole or in part, to meet the requirements of such applicable laws and regulations.

1.2 Regulatory Authorities

The proposals presented in this EA would be implemented subject to the following regulatory authorities:

- Taylor Grazing Act of 1934 as amended and supplemented,
- Federal Land Policy and Management Act of 1976,
- Public Rangelands Improvement Act of 1978 and,
- 43 CFR Part 4100 et al – Grazing Administration

1.3 Land Use Plan Conformance

The proposed action is in conformance with the Bureau of Land Management (BLM) *Paradise-Denio Management Framework Plan*, 1982, MFP III decisions including the following:

- Grazing will be managed in the Paradise-Denio Resource Area with multiple uses fully considered (RM-1)
- Establish period of use for each allotment and base management on the physiological requirements of key species (RM-1.5)
- Manage, maintain and improve the rangeland conditions on the public lands (RM-1.11)
- Improve and maintain a sufficient quantity, quality and diversity of habitats for all species of wildlife in the planning area (WL-1)

1.4 Relationship to Laws, Regulations, and Other Plans

The proposed action conforms to the recommendations presented in the SRH as developed in consultation with the Sierra Front-Northwestern Great Basin Resource Advisory Council, other interested publics and approved by the Secretary of the Interior on February 12, 1997. Grazing practices and activities subject to the Standards and Guidelines include the development of grazing-related portions of activity plans, establishment of terms and conditions of the permits, leasing and other livestock grazing authorizations, and range improvements such as vegetation manipulation, fence construction and the development of water. These activities must be in conformance with these approved Standards:

a. Soil processes will be appropriate to soil types, climate and land form.

b. Riparian/wetland systems are in properly functioning condition.

c. Water quality criteria in Nevada or California State Law shall be achieved or maintained.

d. Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse.

e. Habitat conditions meet the life cycle requirements of special status species.

These Standards and Guidelines reflect the stated goals of maintaining or improving rangeland health while providing for the viability of the livestock industry in the Sierra Front – Northwestern Great Basin Resource Area.

The grazing permit that is being analyzed is for livestock grazing use that was authorized by the Washburn Allotment Final Multiple Use Decision dated October 5, 1994.

1.5 Identification of Issues

On May 26, 2006, a scoping letter was sent to the entire mailing list for the Washburn Allotment plus others who had expressed interest in the general area. This letter informed the recipients of the task, solicited information about issues and concerns, and included the proposed schedule. The BLM considered all comments received in determining the scope of this analysis. In summary the concerns included: affected environment, carrying capacity, cumulative impacts, impacts to other resources and users, monitoring, range improvements, utilization, water and wildlife.

2.0 THE PROPOSED ACTION AND ALTERNATIVES

2.1 Items Applicable to the Proposed Action and Alternatives 1 and 2

The following terms and conditions of this grazing permit are in conformance with the Standards and Guidelines for the Sierra Front - Northwestern Great Basin Resource Advisory Council, approved by the Secretary of the Interior on February 12, 1997.

2.1.1 Required Terms and Conditions

The terms and conditions of the permit will be modified if additional information indicates that revision is necessary to conform to 43 CFR 4180 as supplemented by the Sierra Front - 9/8/2006 Northwestern Great Basin Resource Advisory Council Standards for Rangeland Health and Guidelines for Grazing Management.

The authorized officer reserves the authority to make modifications to the annual grazing authorization that are consistent with the Standards for Rangeland Health and allotment specific objectives.

Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of water sources.

The permittee is required to install bird ladders in water toughs; BLM would provide the bird ladders.

The permittee is required to perform normal maintenance on the range improvements as per their signed Cooperative Agreements/Section 4 Permits prior to turning out in a pasture or use area scheduled for livestock use.

The permittee's certified actual use report, by pasture/use area, is due 15 days after the end of the authorized grazing period.

Pursuant to 43 CFR 10.4(g), the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined at 43 CFR 10.2). Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the immediate vicinity of the discovery and protect it from your activities for thirty (30) days or until notified to proceed by the authorized officer.

No livestock grazing is authorized in any exclosure(s), unless the authorized officer authorizes a grazing prescription to meet specific resource objectives.

Livestock will be trailed by the shortest and quickest routes between pastures and the livestock will not be allowed to drift between pastures. Livestock will not be trailed through the Little Washburn drainage (Mud Spring and Washburn Seeding pastures) in the fall when livestock are trailed from the summer pastures.

The BLM will remove the fence panels from Riser Creek in the fall and the permittee will reinstall the panels each spring. A field visit will be conducted prior to livestock turnout into the summer pastures to ensure panels are in place. No livestock are allowed into the summer pastures (Riser Creek, Long Ridge, Rock Spring) prior to installation of the panels within the Riser Creek protected area.

2.1.2 Temporary Non-Renewable (TNR) Use – Discretionary Action Common to the Proposed Action and Alternative 1

When the authorized officer determines that additional forage is temporarily available for livestock, he **may** authorize its use on a nonrenewable basis. Nonrenewable grazing permits or leases may be issued on an annual basis to qualified applicants when forage is temporarily available, provided this use is consistent with multiple use objectives and does not interfere with existing livestock operations on public lands. (43 CFR 4110.3-1 and 4130.6-2)

2.2 Proposed Action

The Proposed Action is to issue a ten year grazing permit to Mentaberry Brothers and modify the pasture rotation for the Washburn Allotment. This would allow 255 head of cattle and 7 head of horses to graze for a total of 1,464 Animal Unit Months (AUM) which equates to approximately 23 acres per AUM. The permitted season of use would be from January 1 to August 31. Since 2001, the 1994 Final Multiple Use Decision (FMUD) was modified through annual authorizations to address riparian conditions. The following is the grazing system as outlined through the annual authorizations (Table 1).

Table 1. Grazing Permit under Proposed Action

Livestock Number	Livestock Kind	Begin Date	End Date	% Public Land	Type Use	AUMs
255	Cattle	03/20	08/31	96	Active*	1328
40	Cattle	01/01	03/19	96	Active*	98
7	Horse	03/20	08/31	96	Active*	36
Total AUMs						1462
*Portion of the grazing preference that is available for livestock use under a permit or lease based on livestock carrying capacity and resource conditions in an allotment and not in suspension						

Table 2. Grazing System under Proposed Action

Pasture	**Year 1**	**Year 2**	**Year 3**
Mentaberry East	REST	03/20 to 04/15	REST
Mentaberry West	REST	04/16 to 06/15	REST
Washburn Seeding	03/20 to 06/15	REST	REST
Mud Spring	REST	REST	03/20 to 06/15
Riser Creek	07/21 to 08/31	REST	06/16 to 07/20
Rock Spring	REST	06/16 to 07/20	07/21 to 08/31
Long Ridge	06/16 to 07/20	07/21 to 08/31	REST
Winter	01/01 to 03/19	01/01 to 03/19	01/01 to 03/19
After Year 3 the rotation repeats starting with year 1.			

Since the change in pasture rotation in 2001, monitoring data has indicated that the permittee has met the current utilization objectives, in most years, for the Washburn Allotment (refer to Section 3.2.4, Table 2).

Under the proposed action, the Washburn Allotment monitoring criteria and objectives would be updated as follows:

A. Short Term Monitoring Criteria:

1. The objective for utilization of key plant species bluebunch wheatgrass (*Pseudoroegneria spicata* (PSSP6), Thurber needlegrass (*Achnatherum thurberianum* (ACTH7)), bottlebrush squirreltail (*Elymus elymoides* (ELEL5)), Idaho fescue (*Festuca idahoensis* (FEID)), Indian ricegrass (*Achnatherum hymenoides* (ACHY)), basin wildrye (*Leymus cinereus* (LECI4)) and crested wheatgrass (*Agropyron cristatum* (AGCR)) would be 50% or less for any one key species. Occasional use up to 60% would be acceptable as 41% to 60% use is considered as moderate grazing. Repeated utilization of more than 50% on any one species would be considered as not meeting the criteria. (Repeated use means two consecutive grazing seasons, even if interrupted by a year of rest.)

2. Utilization of key streambank riparian plant species sedges (Carex spp), rushes (Juncus spp), bluegrass (Poa spp), willow (Salix spp), aspen ((*Populus*

tremuloides (POTR5)), and wild rose ((*Rosa woodsii* (ROWO) on Little Washburn, Washburn and McDermitt Creeks would not exceed 30%.

3. Utilization of key wetland riparian plant species sedges (Carex spp), rushes (Juncus spp), bluegrass (Poa spp), and aspen ((*Populus tremuloides* (POTR5) would not exceed 50%. Occasional use up to 60% is acceptable as 40% to 60% use is considered as moderate grazing. Repeated utilization of more than 50% on any one species would be considered as not meeting the criteria. (Repeated use means two consecutive grazing seasons, even if interrupted by a year of rest.)

4. The standards below apply to all streams (Riser, McDermitt and Washburn Creeks) that are habitat or potential habitat for the federally listed threatened Lahontan cutthroat trout (LCT), with the exception of approved water gaps:

   a. Riparian herbaceous vegetation stubble height would be equal to or greater than six inches (6") by October 1 in streambank communities: sedges (*Carex spp.*), rushes (*Juncus spp.*), and bluegrass (*Poa spp.*).

   b. Utilization of woody riparian vegetation would not exceed thirty percent (30%): aspen (*Populus tremuloides*), willow (*Salix spp.*), and wild rose (*Rosa woodsii*).

   c. Streambank alteration would not exceed 10% along streams that are habitat or potential habitat for federally listed threatened Lahontan cutthroat trout.

B. Long Term Objectives:

1. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for livestock, with an initial stocking level of 1464 AUMs.

2. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for big game, with an initial forage demand of 30 AUMs for mule deer and 96 AUMs for pronghorn.

3. Sagebrush Habitat-Sagebrush Obligates

   Maintain and improve sagebrush plant communities on stable soils with structurally diverse shrub component in various age classes (within a stand or among stands across the landscape) with vigorous, diverse self-sustaining under story of native grasses and forbs based on ecological site potential.

4. Maintain and improve the following stream habitat conditions on Riser Creek based on stream survey studies.

    1. Stream cover 60% or above
    2. Streambank stability 60% or above

2.2.1 Temporary Non-Renewable

Allow temporary non-renewable use based on monitoring and actual forage production for the year, not to exceed 1,926 AUMs (Total Grazing Preference = 1,464 AUMs active use + 462 AUMs suspended use). The permittee would be required to meet the short term objectives and must meet or make progress towards long term objectives.

2.3 Alternative 1. No Action (1994 FMUD)

Under this alternative, the existing permit would be reissued to Mentaberry Brothers for the Washburn Allotment under the same terms and conditions. This action would allow for current permitted numbers of livestock to graze the allotment from January 1 to November 30 which equates to 1464 AUMs as follows (Table 3):

Table 3. Grazing Permit under 1994 FMUD

Livestock Number	Livestock Kind	Begin Date	End Date	% Public Land	Type Use	AUMs
224	Cattle	03/20	06/15	96	Active*	622
222	Cattle	06/16	08/31	96	Active*	540
57	Cattle	09/01	11/30	96	Active*	164
40	Cattle	01/01	03/19	96	Active*	98
7	Horse	03/20	08/31	96	Active*	36
Total AUMs						1460
*Portion of the grazing preference that is available for livestock use under a permit or lease based on livestock carrying capacity and resource conditions in an allotment and not in suspension						

The pasture rotations under this alternative would be in conformance with the 1994 FMUD for the Washburn Allotment.

Table 4. Grazing System under the 1994 FMUD

Pasture	Year 1	Year 2	Year 3	Year 4
Mentaberry East	03/20 to 04/15	09/01 to11/30	03/20 to 04/15	REST
Mentaberry West	04/16 to 06/15	REST	04/16 to 06/15	REST
Washburn Seeding	REST	03/20 to 06/15	REST	03/20 to 06/15
Mud Spring	REST	03/20 to 04/15	04/16 to 06/15	09/01 to11/30
Riser Creek	REST	REST	07/21 to 08/31	REST
Rock Spring	06/16 to 07/20	07/21 to 0 8/31	REST	06/16 to 07/20
Long Ridge	07/21 to 08/31	REST	06/16 to 07/20	07/21 to 08/31
Winter	01/01 to 03/19	01/01 to 03/19	01/01 to 03/19	01/01 to 03/19

The current multiple use objectives for the Washburn Allotment as outlined in the 1994 FMUD are:

A. Short Term Objectives:

1. The objective for utilization of key streambank riparian plant species (CAREX, JUNCUS, POA, SALIX, ASPEN, ROWO) on Washburn and McDermitt Creeks is 30%. Utilization data will be collected at the end of the grazing period.

2. The objective for utilization of key wetland riparian plant species (CAREX, JUNCUS, POA, ASPEN) is 50%. Utilization data will be collected at the end of the grazing period.

3. The objective for utilization of key upland plant species (SIHY, STTH2, ELCI, ORHY, AGCR, POSE, AGSP, FEID) is 50%. Utilization data will be collected at the end of the grazing period.

B. Long Term Objectives:

1. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for big game, with an initial forage demand of 30 AUMs for mule deer, and 96 AUMs for pronghorn.

   a. Improve to and maintain 15,719 acres (includes crucial habitat in the Long Ridge area) in Montana Mountains DY-11 in good to excellent mule deer habitat condition.

   b. Improve to and maintain 26,215 acres in Montana PY-6, 1,557 acres in Quinn River PY-8, 2,643 acres in Long Ridge PW-12 and 380 acres in Montana Mountains PS-5 in fair to good pronghorn habitat condition.

2. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for livestock, with an initial stocking level of 1,533 AUMs.

3. Improve range condition from poor to fair on 2,711 acres and from fair to good on 884 acres.

4. Improve to and maintain 3 acres of aspen habitat types to ensure good reproduction and maximize recruitment within the stand.

5. Improve to and maintain 112 acres of riparian and meadow habitat types to ensure species diversity and quality, and maximize reproduction and recruitment of woody riparian species.

6. Improve to and maintain the following stream habitat conditions from 62% on Riser Creek, from 52% on Washburn Creek and from 55% on McDermitt Creek to an overall optimum of 60% or above.

    1. Streambank cover 60% or above
    2. Streambank stability 60% or above

7. Improve or maintain suitable sage grouse strutting, nesting, brood rearing, and/or wintering habitat in good condition with the following conditions.

    Strutting Habitat

    1. Low sagebrush or brush free areas for strutting, and nearby areas of sagebrush having 20-50% canopy cover for loafing.

    Nesting Habitat

    1. Areas within 2 miles of strutting grounds
    2. Sagebrush between 7 and 31 inches of height (optimum = 16 inches)
    3. Sagebrush canopy coverage 20-30% (optimum = 27%)
    4. Understory cover allows for concealment of the nest

    Brood Rearing Habitat

    1. Sagebrush canopy cover 10-21% (optimum = 14%)
    2. High composition of forb species
    3. Vigorous available meadow vegetation in late summer and fall

    Winter Habitat

    1. Greater than 20% sagebrush canopy cover
    2. Areas do not maintain high winter snow depth as a function of elevation or topography

8. Improve to and maintain the water quality of Riser Creek to the State criteria set for the following beneficial uses: livestock drinking water, cold water aquatic life, wading (water contact recreation) and wildlife propagation.

2.3.1 Temporary Non-Renewable

Allow temporary non-renewable use based on monitoring and actual forage production for the year, not to exceed 1,926 AUMs (Total Grazing Preference = 1,464 AUMs active use + 462 AUMs suspended use). The permittee would be required to meet the short term objectives and must meet or make progress towards long term objectives.

2.4 Alternative 2. No Livestock Grazing

Under the No Livestock Grazing Alternative, no permit would be issued. The permit would be cancelled under this alternative. As a result, the permittee would not be authorized to graze livestock in the Washburn Allotment.

The Paradise Denio Grazing EIS, 1981, analyzed livestock use alternatives including a "no grazing" alternative. That "no grazing" analysis is applicable to this document.

Selection of the No Grazing Alternative would not be an option under the Paradise-Denio Management Framework Plan III (PD MFP III). A decision to amend the PD MFP III would be required as grazing was identified as an appropriate use for the public lands in the Washburn Allotment.

3.0 THE AFFECTED ENVIRONMENT

The Washburn Allotment is located approximately 6 miles west of McDermitt, Nevada. The allotment is approximately 33,988 acres in size, of which approximately 1,778 acres are private land (BLM 2006a).

A variety of laws, regulations, executive orders, and policy directives mandate that the effects of a proposed action and alternatives on certain critical environmental elements be considered. Not all of the critical elements that require inclusion in this EA will be present, or if they are present, may not be affected by the proposed action and alternatives (Table 5). Only those mandatory critical elements that are present and affected, or need to be considered, are described in this section.

In addition to the mandatory critical elements, there are additional resources that require impact analysis relative to the proposed action and alternatives. These are presented in section **3.2 Additional Affected Resources.**

3.1 Critical Environmental Elements

To comply with the National Environmental Protection Act, the following elements of the human environment are subject to requirements specified in statute, regulation or executive order and must be considered.

Table 5. List of Critical Elements of the Human Environment.

Critical Elements	Not Present	Present Not Affected	Present Affected	Comments
Air Quality		**Present Not Affected**		
Areas of Critical Environmental Concern (ACEC's)	**Not Present**			No ACEC's are located in the area of the Proposed Action
Cultural Resources			**Present Affected**	
Environmental Justice	**Not Present**			Neither the Proposed Action nor the alternatives involves minority or low income populations.
Floodplains	**Not Present**			No floodplains are located in the area of the Proposed Action or alternatives.
Invasive, Nonnative Species			**Present Affected**	
Migratory Birds			**Present Affected**	
Native American Religious Concerns		**Present Not Affected**		Available ethnographic data indicate that the Proposed Action and alternatives would not affect areas of Native American traditional or religious concern.
Prime or Unique Farmlands	**Not Present**			No prime or unique farmlands are located in the area of the Proposed Action.
Threatened & Endangered Species			**Present Affected**	Lahontan cutthroat trout recovery habitat exists in Riser, Washburn, and McDermitt Creeks.
Wastes, Hazardous or Solid	**Not Present**			No hazardous or solid wastes are known to be located in the area of the Proposed Action or alternatives.

Critical Elements	Not Present	Present Not Affected	Present Affected	Comments
Water Quality (Surface and Ground)			**Present Affected**	
Wetlands and Riparian Zones			**Present Affected**	
Wild and Scenic Rivers	**Not Present**			No wild or scenic rivers are located in the area of the Proposed Action.
Wilderness	**Not Present**			No wilderness or wilderness study areas (WSA's) are in the area of the Proposed Action.

The critical elements identified in Table 5 as being not present or present and not affected will not be analyzed further in this document.

The following critical elements have been identified in Table 5 as being present and affected by the proposed action and alternatives: cultural resources, invasive, non-native species, migratory birds, threatened and endangered species, water quality (surface and ground), and wetlands and riparian zones.

3.1.1 Cultural Resources

The Montana Range is a culturally sensitive area. Cultural resources are abundant in the Washburn Allotment. Prehistoric sites, ranging from small lithic scatters to large complex camps are located in the project area. Some of these sites may contain intact subsurface and/or datable deposits. Historic resources range from historic mining remnants and line camps on the outskirts of large ranches to historic roads. Prehistoric and historic period resources are often poorly documented and at this time, no resources have been nominated for the National Register, though several sites may be eligible for nomination.

3.1.2 Invasive, Non-Native Species

Several laws authorize control of noxious weeds on public land under the BLM's administrative jurisdiction (e.g., The Federal Insecticide, Fungicide and Rodenticide Act of 1972, Federal Noxious Weed Act of 1974, FLPMA (1976), and the Public Rangelands Improvement Act of 1978).

Nevada Revised Statutes, Chapter 555.05 defines "noxious weeds" and mandates land owners and land management agencies to control noxious weeds on lands under their jurisdiction.

Of the noxious weed species identified in Nevada Revised Statutes, Chapter 555.05, two, Russian knapweed (*Acroptilon repens*) and perennial pepperweed (*Lepidium latifolium*), have

been found within the Washburn Allotment along roads. Hoary cress (*Cardaria draba*) has been found within the vicinity of the allotment.

3.1.3 Migratory Birds

Migratory birds are protected and managed under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 *et. seq.*) and Executive Order 13186. Under the MBTA nests (nests with eggs or young) of migratory birds may not be harmed, nor may migratory birds be killed. Executive Order 13186 directs federal agencies to promote the conservation of migratory bird populations.

Most of the vegetation communities on the Washburn Allotment are characterized by sagebrush species. Migratory birds associated with this vegetative community may include: black-throated sparrow (*Amphispiza bilineata*), Brewer's blackbird (*Euphagus cyanocephalus*), Brewer's sparrow (*Spizella breweri*), burrowing owl (*Athene cunicularia*), canyon wren (*Catherpes mexicanus*), gray flycatcher (*Empidonax wrightii*), green-tailed towhee (*Pipilo chlorurus*), horned lark (Eremophila alpestris), lark sparrow (*Chondestes grammacus*), loggerhead shrike (*Lanius ludovicianus*), rock wren (*Salpinctes obsoletus*), sage sparrow (*Amphispiza belli*), sage thrasher (*Oreoscoptes montanus*), western meadowlark (*Sturnella neglecta*), and vesper sparrow (*Pooecetes gramineus*).

Little Washburn Creek, McDermitt Creek, Riser Creek and Washburn Creek may provide habitat for species typically associated with habitats characterized as lowland riparian areas. Migratory birds associated with these habitats may include: American robin (*Turdus migratorius*), bank swallow (*Riparia riparia*), barn swallow (*Hirundo rustica*), Bewick's wren (*Thryomanes bewickii*), black-chinned hummingbird (*Archilochus alexandri*), black-headed grosbeak (*Pheucticus melanocephalus*), broad-tailed hummingbird (*Selasphorus platycercus*), brown-headed cowbird (*Molothrus ater*), downy woodpecker (*Picoides pubescens*), house finch (*Carpodacus mexicanus*), house wren (*Troglodytes aedon*), lazuli bunting (*Passerina amoena*), lesser goldfinch (*Carduelis psaltria*), northern flicker (*Colaptes auratus*), northern mockingbird (*Mimus polyglottos*), northern oriole (*Icterus galbula*), northern rough-winged swallow (*Stelgidopteryx serripennis*), song sparrow (*Melospiza melodia*), spotted sandpiper (*Actitis macularia*), tree swallow (*Tachycineta bicolor*), violet-green swallow (*Tachycineta thalassina*), warbling vireo (*Vireo gilvus*), western kingbird (*Tyrannus verticalis*), western wood-pewee (*Contopus sordidulus*), willow flycatcher (*Empidonax traillii*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Dendroica petechia*) (Great Basin Bird Observatory, 2003).

The burrowing owl, loggerhead shrike, vesper sparrow, and yellow-breasted chat are BLM designated sensitive species. Most of these species require a diversity of plant structure and herbaceous under story. Good diversity provides sufficient habitat for nesting, foraging and cover.

3.1.4 Threatened and Endangered Species

A list of federally listed, proposed or candidate species was requested from the U.S. Fish and Wildlife Service for the allotment. The Fish and Wildlife service responded that the yellow-

billed cuckoo (*Coccyzus americanus*), a candidate species, may be found on the allotment. Lahontan cutthroat trout (LCT) (*Oncorhynchus clarki henshawi*), a threatened species, are found within the allotment.

Yellow-billed Cuckoo

The cuckoo is a riparian obligate species that requires dense cottonwood-willow forested tracts (Neel, 1999). There are no riparian habitats with those characteristics occurring on the allotment. Any consideration of the cuckoo can be dismissed since it is not present and not affected.

Lahontan cutthroat trout

Lahontan cutthroat trout is a threatened species under the Endangered Species Act of 1973, as amended, and is the only listed species known to potentially occur on the Washburn Allotment. Recovery habitat for LCT exists within Riser, Washburn, and McDermitt creeks. Potential habitat of LCT exists in Riser Creek and potential seasonal habitat exists in Washburn and McDermitt creeks within the allotment.

Riser Creek was completely fenced, with water gaps, in 1992 to protect LCT and their habitat. Streambank cover has improved with increased willows and improved pool structure. The creek was assessed as properly functioning in 2005.

Stream parameter data was collected by the Nevada Division of Wildlife (NDOW) during the evaluation period. NDOW uses the General Aquatic Wildlife Survey for analysis of this data and calculates a Habitat Condition Index (HCI) derived by using the six habitat parameters of pool measure (PM), pool structure (PS), stream bottom (SB), bank cover (BC), bank soil stability (BSS) and bank vegetative stability (BVS). Riparian Condition Class (RCC) which correlates to bank erosion and changes in riparian vegetative composition was also calculated as the average of bank cover and bank stability obtained from stream inventories. Below are stream survey parameters collected during the evaluation period for the portions of Riser Creek within the Washburn Allotment.

Table 6. Stream Survey Data for Riser Creek

Year	Agency	PM	PS	SB	BC	BSS	BVS	%HCI	RCC
1987	NDOW	53.2	35.2	92.0	53.8	56.3	57.8	58.1	56.0
1991	NDOW	46.1	0.0	82.1	46.3	50.0	52.5	46.2	49.6
1995	NDOW	48.9	10.9	74.5	86.6	78.6	74.7	62.3	82.6
2000	NDOW	39.6	43.8	82.3	73.6	68.3	66.1	62.3	70.95

Pool Measure (PM) for Riser Creek decreased, yet the pool/ riffle ratio used to determine this measure is well within the range found to produce high numbers of trout (0.5-1.5:1). Although the pool frequency is reduced, a 30% increase in pool structure or quality during the evaluation period will benefit all age classes of salmonids. This is particularly beneficial to mature salmonids, which require higher quality pools for thermal refugia during the summer and winter months. The Habitat Condition Index (HCI) values remained the same for both the 1995 and

2000 surveys; however they have improved over the long term. The Habitat Condition Index (HCI) can be correlated to some degree on annual precipitation within a watershed. Since annual precipitation within this region in 2000 was below average for the region, values such as Pool Measure (PM) and Pool Structure (PS) for 2000 may be higher than the survey indicates within a normal precipitation year.

Overall Riser Creek has shown a marked improvement in aquatic habitat and nearly all factors have improved since 1987. One potential reason for the variability with riparian habitat measures is unauthorized cattle grazing within the exclosures. The possibility exists for livestock to get through/under /over these fences into the unauthorized areas which can result in increase utilization of riparian species. Riser Creek was corridor fenced in 1992 and as a result RCC had greatly improved by 1995. Additionally, ungulate damage levels and substrate embeddedness levels were reduced from 1987 and 1991 levels. However, the 2000 stream survey found ungulate damage levels and substrate embeddedness levels to be moderate to heavy. Accordingly, unauthorized livestock grazing within the corridor fence may be increasing due to the lack of maintenance and/or aging of the fence materials.

Riser Creek was treated by the NDOW in 2003 and 2004 to remove hybridized Lahontan cutthroat trout/rainbow trout. LCT is a federally listed threatened species and Riser Creek has been identified as recovery habitat in the LCT recovery plan. Trout population estimates for Riser Creek in number of fish /mile for 1995, 1996, and 2000 are shown in the table below.

Table 7. Riser Creek Trout Population Estimates

Stream/Date	1995	1996	2000
Riser	114	419	187

The population surveys for 1995 and 2000 were conducted in June and July, respectively, while the survey for 1996 was conducted during October. The fish per mile estimate is directly correlated to decreased water flow and decreased available habitat, which will tend to congregate fish in pools. Another potential reason for the increased fish per mile estimate is the presence of young of the year (YOY) rainbows and hybrids. Since the 1995 and 2000 surveys were conducted during early summer, the population estimates should be representative of the fish population and seasonal habitat usage within the sample reaches during that time period. Fish population increases are consistent with improved pool habitat, which has been shown to be critical in respect to recruitment among salmonid age classes. Fish require a variety of water depths, velocities, and forms of cover to complete their life cycles, thus the increase in quality habitats, namely pools, will benefit all age classes.

Washburn Creek can provide seasonal habitat for LCT within the Washburn Allotment. The segment of Washburn Creek within the Washburn Allotment has not been surveyed by NDOW nor had fish population data collected, since the downstream distribution limit of LCT in the summer period is located further upstream. The 2005 riparian functionality assessment found the creek to be functioning at risk with an upward trend.

The segment of McDermitt Creek within the Washburn Allotment was surveyed by NDOW in 1988/89 and 1998. The results of the survey are shown below.

Table 8. NDOW Stream Survey Data for McDermitt Creek

Year	Agency	PM	PS	SB	BC	BSS	BVS	%HCI	RCC
1988/89	NDOW	42.8	89.7	68.5	54.3	72.4	68.3	67.0	69.3
1998	NDOW	46.8	96.7	69.2	59.3	79.5	77.5	72.5	72.1

Overall, McDermitt Creek slightly improved from 1988/89 to 1998 and has likely continued to improve or remained static since then. The riparian functionality conducted in 1998 found this segment of McDermitt Creek to be functioning with an upward trend. Stream survey data collected by NDOW on McDermitt Creek within the Washburn Allotment indicated an upward trend. Objectives for streambank stability were met, and objectives for streambank cover were nearly met.

3.1.5 Water Quality (Surface and Ground)

The Winnemucca Field Office water inventory identified approximately 14 springs and seeps that are within, or along the border of the Washburn Allotment. Most of these springs are associated with, or located along the stream channels.The Washburn Allotment is bounded by Riser, Washburn, and McDermitt Creeks, while Little Washburn Creek (tributary to Washburn Creek) occurs within the allotment. No water quality data has been collected within the Washburn Allotment; however, the water is expected to be of good quality and typical of streams at this elevation within the Great Basin. This assumption is further supported if the riparian functionality data is used as surrogate for water quality. The Nevada Division of Environmental Protection has not listed any of the water bodies within the Washburn Allotment on the State of Nevada List of Impaired Water Bodies (Section 303(d) of the Clean Water Act).

3.1.6 Wetland and Riparian Zones

Little Washburn, Riser, and Washburn Creeks are inside the Washburn Allotment. Most of the springs were considered part of the stream. The following lotic riparian zones have been identified on public land in the Washburn Allotment, refer to Riparian Functionality Map.

Table 10. 1998 Proper Functioning Condition (PFC) Results for Lotic Riparian Areas

1998	PFC (miles)	Functioning at Risk			Nonfunctioning (miles)
		Upward (miles)	Static (miles)	Downward (miles)	
Riser Cr	0	0	6.51	0	0
Little Washburn Cr	0	0	8.02	0	0
Washburn Cr	0	0.38	0	0	0
McDermitt Cr	0	0.91	0	0	0

Table 11. 2005 PFC Results for Lotic Riparian Areas

2005	PFC (miles)	Functioning at Risk			Nonfunctioning (miles)
		Upward (miles)	Static (miles)	Downward (miles)	
Riser Cr	6.51	0	0	0	0
Little Washburn Cr	0	8.02	0	0	0
Washburn Cr	0	0.38	0	0	0

3.2 Additional Affected Resources

In addition to the critical elements, the following resources may be affected by the proposed action and alternatives: socio-economics, soils, special status species, vegetation, and wildlife. Minerals, recreation, transportation resources, visual resources, and wild horses would not be affected by the proposed action and alternatives and are, therefore, not described.

A review of the Washburn Allotment monitoring data was conducted. Baseline data included the Natural Resource Conservation Service, soil survey information, NDOW habitat information, Sage Grouse PMU R-values, slope topology, the Winnemucca BLM Field office water and weed inventories. Monitoring data included climatic data, ReGap data, Nevada Natural Heritage Program cheatgrass monitoring, professional judgment, trend, and utilization. Utilization monitoring was conducted from 1994 through 2005.

3.2.1 Socio-Economics

Historically, ranching has played a major role in the northern Nevada way-of-life; therefore, livestock grazing also holds a social value as well as an economic value within the community. Because of ranching, public and private land uses in northern Nevada are often intertwined. Public land is used for livestock grazing during part of the year and private land is used to care for livestock the remainder of the year. Because of this public and private land use relationship, decisions made in the management of rangelands can amplify impacts to ranchers.

Humboldt County is comprised of 6,210,560 acres (2002 Humboldt County Regional Master Plan). Of this total, 4,986,811 acres are publicly owned rangeland, much of which is used for livestock grazing. The Washburn Allotment includes 32,203 acres of public land or approximately 0.65% of Humboldt County's total publicly owned land. The privately owned remaining acres of the Washburn Allotment are utilized, in part, for agricultural purposes in support of livestock operations.

3.2.2 Soils

Soils information is extracted from the Soil Survey of Humboldt County Nevada, East Part, 2002, refer to maps: soil, water and wind erosion hazard potential, biological crust potential, and percent of slope. A portion of the Washburn Allotment is located in Oregon. Soil survey information is lacking for this area.

3.2.3 Special Status Species

No on-the-ground field investigation was conducted for sensitive/protected plant, or animal species including birds. However, according to the Nevada Natural Heritage (NNH) data base (January, 2006) and the Nevada Department of Wildlife (NDOW) Diversity data base (2005) were consulted for the possible presence of endangered, threatened, candidate and/or sensitive plants or animal species. The NNH data base showed the presence of lonesome milkvetch (*Astragalus solitarius*) adjacent to, but outside of the allotment. The NDOW data base showed one observation of a golden eagle (*Aquila chrysaetos*) on the allotment.

3.2.3.1 Sensitive Species

Sensitive species are taxa that are not already included as BLM Special Status Species under (1) Federally listed, proposed, or candidate species; or (2) State of Nevada listed species. BLM policy is to provide these species with the same level of protection as provided for candidate species in BLM Manual 6840.06C, that is to "ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed."

Burrowing Owl (*Athene cunicularia hypugaea*)

Burrowing owls may be found in sagebrush/bunchgrass vegetative communities, so it is possible that they may occur on the allotment. They are dependent on burrowing mammal populations for maintenance of nest habitat. Dense stands of grasses and forbs within owl home ranges support populations of rodent and insect prey. There are no known colonies of burrowing owls within the Washburn Allotment.

Golden Eagle (*Aquila chrysaetos*)

The lone golden eagle observation was made in 1995 during a stream survey along Riser Creek. Golden eagles are a sensitive species that have broad ecological amplitude.

Loggerhead Shrike (*Lanius ludovicianus*)

Loggerhead shrikes may be found in sagebrush/bunchgrass vegetative communities, so it is possible that they may occur on the allotment. These birds would benefit from habitat with a diverse structure and species composition. Healthy sagebrush communities would provide these habitat characteristics. According to Paige and Ritter (1999), "Long–term heavy grazing may ultimately reduce prey habitat and degrade the vegetation structure for nesting and roosting. Light to moderate grazing may provide open foraging habitat."

Lonesome Milkvetch (*Astragalus solitarius*)

This perennial plant was identified at three locations to the south of the allotment. It is typically found along washes and banks of shallow soils. It is found in association with big sagebrush, low sagebrush, horse brush and four-wing saltbush.

Pygmy Rabbit (*Brachylagus idahoensis*)

In the Great Basin the pygmy rabbit is typically restricted to the sagebrush-grass complex. A dietary study of pygmy rabbits showed that they were dependent on sagebrush year round. Sagebrush was eaten throughout the year at 51% of the diet in summer and 99% in the winter. They also showed a preference for grasses and to lesser extent forbs, in the summer (Green and Flinders, 1980). These data seem to indicate that pygmy rabbits require sagebrush stands with an under story of perennial grasses to meet their seasonal dietary requirements. There are no known populations of pygmy rabbits within the Washburn Allotment.

Sage-Grouse (*Centrocercus urophasianus*)

The Washburn Allotment is located in the Lone Willow Population Management Unit. All classes of seasonal sage-grouse habitat occur on the allotment including summer, winter, and nesting. Several leks have been identified on the allotment.

The sage-grouse is a sagebrush obligate species and is strictly associated with sagebrush/grasslands. Sage-grouse may eat a variety of grasses, forbs and insects during the breeding season. However, they feed almost entirely on sage-brush during the winter months, selecting shrubs with high protein levels (Paige and Ritter, 1999).

Winter habitat management/protection should consist of the following (Connelly et.al., 2000): Maintain sagebrush communities on a landscape scale, allowing sage-grouse access to sagebrush stands with canopy cover of 10-30% and heights of at least 25-35 cm regardless of snow cover.

Summer habitat is generally characterized by relatively moist conditions and many succulent forbs in or adjacent to sagebrush cover. There are several springs and creeks that provide habitat for the sage-grouse.

Nesting habitat management/protection should consist of the following (Connelly et.al., 2000): Support 15-25% canopy cover of sagebrush, perennial herbaceous cover averaging $\geq$ 18 cm in heights with $\geq$ 15% canopy cover for grasses and $\geq$ 10% for forbs and a diversity of forbs.

Sage-grouse habitat was monitored in 2004; see section 3.2.4 for additional information. The habitat indicators showed sage-grouse breeding habitat range from marginal plus to suitable. The habitat indicators showed winter range to rate from marginal plus to suitable. A limiting factor in the 23-20 rangeland ecological sites is the sparse taller grass species of bluebunch wheatgrass and Thurber's needlegrass. Both of these sites were dominated by Sandberg's bluegrass. One of the habitat indicators is the average perennial grass canopy cover. Although this indicator was suitable due to the presence of Sandberg's bluegrass, the suitability is qualified since Sandberg's bluegrass is generally a shorter grass and has a less dense growth form than bluebunch wheatgrass or Thurber's needlegrass.

Another sage-grouse study was completed in the Mud Spring pasture in 2004. The habitat indicators for that study showed that the area was suitable breeding habitat and suitable winter range.

Vesper Sparrow (*Pooecetes gramineus*)

The vesper sparrow may be found on the allotment since it typically inhabits sagebrush-grass vegetative communities. It differs greatly from the loggerhead shrike in its foraging habits. It forages on the ground and eats mostly seeds from grasses and forbs and will also eat insects when they are available. The vesper sparrow responds negatively to heavy grazing in sagebrush/grasslands. In these habitats, it benefits from open areas with scattered shrubs and a cover of good bunchgrasses for nest concealment, since it is a ground nester (Paige and Ritter, 1999).

Yellow-breasted Chat (*Icteria virens*)

Yellow-breasted chats are typically associated with dense thickets, which in the Great Basin would be along riparian areas. The Nevada Partners in Flight Bird Conservation Plan (1999) states, "In northern Nevada, yellow-breasted chats prefer riparian shrubs with strong twig support, i.e. buffaloberry and Scouler's willow. They are not as likely to be found in sandbar willow with twigs that are weak and flexible (Neel, 1999). Yellow-breasted Chats require dense vegetation structure and nest from ground level up to 2.4 meters". The Nevada Working Group of Partners in Flight found that management strategies for the MacGillivray's warbler were applicable to the yellow-breasted chat. Those strategies include managing for a dense willow component in suitable riparian stands through protection, enhancement, and restoration.

3.2.4 Vegetation

The potential vegetation communities have been derived from information extracted from the Soil Survey of Humboldt County Nevada, East Part, 2002; refer to Washburn Dominant Potential Vegetation Map. The potential natural vegetation consists primarily of Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) and little sagebrush (*Artemisia arbuscula longicaulis*) with a minor component of shadscale (*Atriplex confertifolia*) and budsage (*Picrothamnus desertorum*).

The Washburn Allotment supports vegetation typical for the Great Basin. The extremes of climate, elevation, exposure, and soil type combine to produce a diverse variety of plant communities. The Washburn ReGap Vegetation Map identifies dominant present vegetation types: S054 Inter-Mountain Basins Big Sagebrush Shrubland, S055 Great Basin Xeric Mixed Sagebrush Shrubland, S078 Inter-Mountain Basins Big Sagebrush Steppe, and S090 Inter-Mountain Basins Semi-Desert Grassland. The concept of S054 is greater than 75 percent shrubs with an herbaceous component of less than 25 percent. The concept of S055 is sagebrush canopy with a sparse understory of perennial bunchgrasses. The concept of S078 is a canopy with perennial grasses and forbs (>25% cover) and an open to moderately dense (10-40% cover) shrub layer. The concept of S090 is a canopy with a sparse to moderate understory of graminoids. These grasslands are typically dominated by perennial bunchgrasses and may include scattered shrubs and dwarf-shrubs of species. Minor components concepts are D09 annual forbs, mainly south and east of the Mentaberry Ranch; N11 water, McDermitt Creek; N31 barren land located on lower west facing side slopes; N80 agricultural lands, Mentaberry Ranch; S065 transition zone between the salt shrub and Wyoming big sagebrush communities, adjacent

to the Mentaberry Ranch; S096 greasewood, lower Washburn Creek; and S100 perennial herbaceous vegetation and the soil or substrate is periodically saturated, Long Ridge. S40 pinyon juniper woodland is misidentified, these are rimrock or rock dominated areas mainly adjacent to Riser Creek.

Cheatgrass (*Bromus tectorum*) is present in the Washburn Allotment. The percent cheatgrass cover is higher in the eastern portion of the allotment and generally ranges from 11 to 15. The highest cheatgrass percent cover is a small area east of the Mentaberry Ranch ranging from 31 to 40 percent. On the western portion of the allotment, percent cheatgrass cover generally ranges 0 and 10 percent.

Recent trend studies conducted on the allotment were geared toward gathering data on a Rangeland Ecological Site basis. Data were gathered on three different ecological sites as follows:

- 23-20 Loamy 10-12" P.Z.
- 23-21 Scabland 10-14" P.Z.
- 23-47 Gravelly Clay 8-10" P.Z.

Data were gathered at two different locations in the 23-20 site. The first was an existing study designated KA-1, located in the West Mentaberry Pasture. Line point intercept, gap intercept and quadrat frequency were conducted at this site. The location of the prior quadrat frequency could not be duplicated exactly, due to missing study stakes. This site should be dominated by bluebunch wheatgrass and Thurber's needlegrass. The results of the line point intercept transects indicated that the site is dominated by Sandberg's bluegrass.

The plant community dynamics for this rangeland ecological site states in part, "As ecological condition declines, woody plants, bottlebrush squirreltail, and Sandberg bluegrass increase as bluebunch wheatgrass, Thurber needlegrass and other desirable forage grasses decrease." A limited amount of Thurber's needlegrass and bluebunch wheatgrass were observed at this site, although no Thurber's needlegrass appeared in either line point intercept transect.

The second 23-20 study was located in the Long Ridge Pasture. This site was dominated by Sandberg's bluegrass. A small percentage (5%) of Thurber's needlegrass occurred in the line point intercept transects.

Line point intercept and gap intercept transects were used to collect data on the 23-21 rangeland ecological site, located in the Riser Creek Pasture. This site should be dominated by Sandberg's bluegrass and low sagebrush. The results of the study indicated that the current vegetation closely reflects the desired plant community since the site is currently dominated by Sandberg's bluegrass and low sage.

Line intercept and quadrat frequency studies were conducted at the 23-47 rangeland ecological site. This was an existing study location designated KA-5 in the East Mentaberry Pasture, however the prior location of the quadrat frequency could not be duplicated exactly, due to missing study stakes. This site should be dominated by Lahontan sagebrush and Thurber's

needlegrass. The results of the studies showed the site is dominated by Lahontan sagebrush and to a lesser extent, Sandberg's blue grass and bottlebrush squirreltail. The desirable Thurber's needlegrass did not occur in the line intercept transect or the quadrat frequency transect.

The Plant Community Dynamics for this Rangeland Ecological site states, "As ecological condition declines, Lahontan sagebrush, rabbitbrush, bottlebrush squirreltail, and Sandberg bluegrass increase as Thurber's needlegrass and other desirable forage grasses decrease".

Utilization data collected on the Washburn Allotment over the period of the 10 year grazing permit resulted in the following use levels (Table 12):

Table 12. Utilization Use Levels of Key Plant Species on the Washburn Allotment

Year	Actual Use AUMs	East Mentaberry Pasture	West Mentaberry Pasture	Long Ridge	Riser Creek	Rock Spring	Mud Spring	Winter	Washburn Seeding
2004	1337				Moderate	Moderate			
2003	1364			Moderate		Light	Slight		
2002	1443			Moderate	Moderate			Light	Light
2001	1462	Slight	Light		Slight	Moderate		Slight	
2000	1300						Moderate		
1999	1176			Light	Slight	Slight	Light		Slight
1998	1295				Moderate	Moderate			
1997	1459					Moderate			
1996	1459	Slight	Moderate	Light			Light		
1995	1295				Light	Moderate	Slight		
1994	1245	Moderate	Light	Moderate		Moderate			
Slight = 1-20%, Light = 21-40%, Moderate = 41-60%, Heavy = 61-80%, Severe 81-100%									

The critical growth period for key plant species is: Thurber's needlegrass and bluebunch wheatgrass, May 1 to July 15; bottlebrush squirreltail, May 1 to June 30; basin wildrye, May 1 to July 31; Idaho fescue, May 15 to July 31; and Indian ricegrass, April 15 to July 15.

Table 13. Climatological data collected at the McDermitt, NV National Oceanic and Atmospheric Administration (NOAA) Station from 1995 through 2005

Climatological Data	
McDermitt NOAA Station	
Year	Growing Season Precipitation (Inches)
1995	**11.49**
1996	**10.17**
1997	7.72
1998	**12.37**
1999	7.79
2000	4.62
2001	5.49
2002	6.33
2003	5.41
2004	4.22
2005	**8.97**
Station Mean	9.35
Notes: Growing season is defined as September through June. Precipitation in the allotment averages from 8 to12 inches annually with much of it coming in the form of snow and rain during the winter months.	

3.2.5 Wildlife

Terrestrial wildlife resources on the Washburn Allotment are typical of the Northern Great Basin. A wide variety of wildlife species common to the Great Basin ecosystem can be found within the allotment. The vegetation on the allotment could be categorized into the two broad vegetative types, primarily big sagebrush with a minor amount of salt desert shrub. Common wildlife species occurring on the allotment include badger (*Taxidea taxus*), blacktailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), mule deer *(Odocoileus hemionus)*, sage grouse, pronghorn antelope *(Antilocapra americana),* chukar partridge and other non-game species.

Mule Deer

The Paradise-Denio Management Framework Plan set the reasonable numbers (AUMs) of mule deer for this allotment at 30 AUMs.

The majority of the habitat is classified as yearlong along with a small portion that is considered summer habitat. The eastern portion of the Washburn Allotment is agricultural lands/unique habitat.

Deer are generally classified as browsers, with shrubs and forbs making up the bulk of their annual diet. The diet of mule deer is quite varied; however, the importance of various classes of forage plants varies by season. In winter, especially when grasses and forbs are covered with snow, their entire diet may consist of shrubby species.

In the Washburn Allotment, Wyoming big sagebrush is probably the most important browse species. Perennial grasses such as bluegrass (*Poa spp*.), bottlebrush squirreltail (E*lymus elymoides*) and Thurber's needlegrass (*Achnatherum thurberianum*) are important when they are green in spring and early summer and in the winter when they are not covered by deep snow. These perennial grasses provide diversity in the mule deer's diet. Forbs such as globemallow (*Sphaeralcea spp.*) would also provide needed diversity in the deer's diet.

Mule deer habitat condition ratings completed for the allotment range from Fair to Excellent condition.

Pronghorn Antelope

The Paradise-Denio Management Framework Plan set the reasonable numbers (AUMs) of pronghorn for this allotment at 96 AUMs.

The pronghorn habitat is described as yearlong. Rangelands with a mixture of grasses, forbs, and shrubs provide the best habitat for pronghorns. Pronghorn seem to prefer habitats with shrub heights between 10-25 inches. Most of the allotment is dominated by Wyoming big sagebrush with the average height approaching or exceeding the 25 inch threshold.

Pronghorn habitat condition ratings completed for the allotment range from Fair to Good condition.

4.0 ENVIRONMENTAL CONSEQUENCES

The environmental consequences of livestock grazing were analyzed in the Paradise-Denio Grazing EIS. The Washburn Allotment proposed action and alternatives are within the array of options identified and analyzed in Paradise-Denio Grazing EIS. Site specific resource information relevant to the proposed action and alternatives, has been identified and is disclosed in the following site-specific analysis.

4.1 Proposed Action

4.1.1 Cultural Resources

Trampling and trailing associated with livestock grazing has the potential to affect cultural resource values by dispersing and destroying artifacts, disrupting site integrity, eradicating surface and subsurface datable cultural deposits. Cattle tend to congregate at water sources; springs, riparian areas, troughs, and salting grounds. Although the Washburn Allotment is not the most sensitive area of the Montana Mountains, certain of these locations tend to coincide with known or potential areas of high cultural resource sensitivity. Cattle also tend to use historic structures for shade and rubbing posts. If cattle are dispersed, these impacts are generally minor.

No range improvements are currently proposed for the Washburn Allotment. If in the future range improvements are proposed, an archaeological survey would be conducted. If such

projects do encounter cultural resources vulnerable to the effects of livestock grazing, affects would be considered by BLM under the protocol agreement with the State Historic Preservation Office. Effects from range improvements on National Register eligible archaeological sites, would be mitigated by using any one or a combination of the following measures: avoidance, protection measures, (e.g., fencing) testing, or data recovery.

4.1.2 Invasive, Non-Native Species

Implementation of the Proposed Action could reduce the spread of invasive and noxious plant species. Healthy native perennial plants would maintain or increase competition with invasive and noxious weed species, reducing weed establishment. The concentration of livestock in the immediate vicinity of water sources and salting areas could result in disturbed areas more susceptible to colonization of invasive or noxious weeds.

4.1.3 Migratory Birds

Under current conditions, habitat for migratory birds is less than optimum, since some of the native bunch grass components are not properly represented. Livestock do not typically utilize sagebrush and the stocking rate (23 acres per AUM) is limited. Upland areas are expected to improve in ecological condition and to function as healthy ecosystems and therefore capable of meeting the lifecycle/habitat requirements of migratory birds. The proposed riparian management in the Mud Spring Pasture should be beneficial to migratory birds since they use riparian areas disproportionately to other habitats.

4.1.4 Socio-Economics

The proposed action would allow for maintenance and/or improvement of rangeland resources and provide sustainability of the permittee's ranching enterprise.

4.1.5 Soils

The winter pasture would be grazed outside the critical growth period. The Mentaberry East Pasture would be grazed on a three year cycle, one year before the critical growth period, followed by two years of rest. Mentaberry West Pastures would be grazed one year during the critical growth period followed by two years of rest. The Washburn Seeding Pasture is grazed during the critical growth period followed by two years of rest. Mud Springs Pasture is grazed during the critical growth period followed by two years of rest. The Riser Creek, Rock Spring, and Long Ridge Pastures would be in a three year rotation grazed late critical growth period after the critical growth period, and rested. The proposed action allows key plant species to complete their life cycle by grazing outside the critical growth period or allowing for rest at least one year out of three, resulting in increasing plant vigor, cover, productivity and diversity. Soil processes would be improved for upland soil.

The highest potential concentration of biological soil crusts is in the Long Ridge pasture. Biological soil crusts would not be maintained in the Long Ridge pasture. Livestock grazing during the summer is detrimental to biological soil crusts, when soils are dry. This is the time of

year when biological soil crusts are more vulnerable to shearing and compressional forces. Winter, Mentaberry East and West, Washburn Seeding and Mud Spring pastures would maintain or improve biological soils crusts. Livestock grazing during the winter and spring when soils are moist is the time of year when biological soil crusts are less vulnerable to shearing and compressional forces. Biological soil crusts are least vulnerable to livestock grazing in the Riser and Rock Spring pastures. Surface rock fragments protect the biological soil crusts.

The proposed action would maintain soil processes and promote healthy, productive and diverse plant communities. The proposed action would maintain and improve ecological condition with increased productivity, litter, soil fertility, infiltration and nutrient cycling.

4.1.6 Special Status Species

Burrowing Owl

Under the proposed grazing regime, upland areas are expected to improve in ecological condition and to function as healthy ecosystems and therefore capable of meeting the lifecycle/habitat requirements of burrowing owls and their prey species.

Golden Eagle

Under the proposed grazing regime, upland areas are expected to function as healthy ecosystems and therefore capable of meeting the lifecycle/habitat requirements of golden eagles and their prey species.

Loggerhead shrike

The proposed grazing regime would provide periodic rest during the growing season and utilization should allow the sagebrush habitats to function as healthy ecosystems. The proposed level of grazing may provide some open foraging areas required by these birds.

Lonesome Milkvetch

Even though this plant was not specifically identified within the Washburn Allotment, there is potential that it may exist on it. Upland areas are expected to function as healthy ecosystems, thus, allowing this species to maintain existing populations.

Pygmy Rabbit

The proposed grazing regime is expected to have a beneficial impact on pygmy rabbit habitat if it is present on the allotment. The most important components of its habitat are sagebrush with a perennial grass understory. Under the proposed action, upland areas are expected to function as healthy ecosystems and therefore capable of meeting the lifecycle/habitat requirements of sagebrush obligate species. No significant mechanical damage to burrows is expected due to the limited livestock stocking levels.

Sage-Grouse

There are some impacts from grazing that may affect sage-grouse to differing degrees based on seasonal use area. The proposed riparian management should be beneficial to sage-grouse since they use riparian areas heavily for brood rearing and in the summer. The primary considerations for sage-grouse winter range are adequate sagebrush height and canopy cover. If grass and forb species diversity and abundance increase there may be indirect impacts to sage-grouse by providing more food and cover. Sagebrush stands with good grass and forb under story are less susceptible to repeated wildfires and would allow for natural recovery. The expected improved ecological condition should allow sage-grouse to meet their life cycle requirements.

Vesper sparrow

Periodic rest should allow for the maintenance and re-establishment of native bunchgrasses. This would be especially beneficial to these birds since they need good ground cover for nesting and seeds for feed. It is impossible to meet all of the life cycle requirements for all species on every sagebrush stand. However, it is anticipated that healthy sagebrush stands with natural patchiness would provide the habitat requirements on the Washburn Allotment.

Yellow-breasted Chat

Improvement in riparian areas is expected under this alternative and this would be beneficial to this species.

4.1.7 Threatened and Endangered Species

LCT is the only listed species known to potentially occur on the Washburn Allotment. Recovery habitat for LCT exists within Riser, Washburn, and McDermitt creeks.

Impacts may include a) increased stream temperature due to loss of overhanging vegetation, b) increased sedimentation due to streambank and upland erosion, and c) increased channel width and undercut bank habitat loss due to hoof-induced bank shearing and trampling. The proposed action includes the following measures that would lessen the impacts to the LCT recovery habitat: a) livestock unable to graze Riser Creek due to the creek being fenced off, except in approved water gaps, b) a 6” stubble height requirement on riparian herbaceous vegetation on all streams that are habitat or potential habitat for the LCT, c) maintain a maximum of 30% utilization on woody species in woody dominated portions of all streams that are habitat or potential habitat for the LCT, and d) a 10% or less limit of annual stream alteration requirement on herbaceous portions on all streams that are habitat or potential habitat for the LCT.

4.1.8 Vegetation

The winter pasture is grazed outside the critical growth period. The Mentaberry East and Mentaberry West Pastures are grazed on a four year cycle, one year before the critical growth period, one year during the critical growth period, followed by two years of rest. Washburn Seeding Pasture is grazed alternated one year rest and the next year during the critical growth

period. Mud Springs Pasture is grazed during the critical growth period followed by two years of rest. The Riser Creek, Rock Spring, and Long Ridge Pastures would be in a three year rotation grazed late critical growth period, after the critical growth period, and rested. The proposed action allows key plant species to complete their life cycle, resulting in increasing plant vigor, cover, productivity and diversity. Vegetation conditions would be improved for upland key plant species.

4.1.9 Water Quality (Surface and Ground)

Impacts to water resources may occur but would be temporary and repeated in nature. The temporary nature of these impacts would be due to the reliance of the proposed grazing system on periodic rest, grazing deferral, hot season avoidance and previously constructed riparian exclosures. Typically, livestock grazing within riparian areas can affect the physical (sediment and temperature) and biologic (bacteria and pathogens) components of water quality, and to a lesser extent, the chemical aspects (mainly via nutrient enrichment). By employing grazing strategies that minimize, or de-emphasize grazing within the riparian zone, these impacts would be lessened. The current grazing system (proposed action) incorporates these strategies and is demonstrating improvements in riparian conditions. Improvement in riparian condition should result in improved water quality.

4.1.10 Wetlands and Riparian Zone

Livestock can affect riparian areas through removal of vegetation and mechanical damage caused by hoof action that can cause increased erosion, evaporation, and compaction.

Little Washburn and Washburn Creeks are not at PFC. By allowing rest two years on the Mud Spring and Washburn Seeding pastures, the streambank riparian habitat would improve. The potential for regrowth along these stream bank riparian habitats has increased through removal of livestock by 06/15. This would ensure sediment trapping for early spring runoff. This proposed action eliminates fall use on the Mud Springs pasture, which would help improve conditions on Little Washburn Creek. Riser Creek has been fenced, other than watergaps, and the riparian habitat should continue to improve. Riser Creek is at PFC, Little Washburn, Washburn, and McDermitt Creeks are functioning at risk with an upward trend. The increase in riparian condition has improved soil processes and herbaceous and woody riparian vegetation resulting in significant progress toward PFC.

Under the proposed grazing system, livestock grazing would occur in the Mud Spring and Washburn Seeding Pastures, which contain streams and riparian zones, during the spring and would be removed no later than June 15 and then rested for the following two growing seasons. Livestock grazing in the Riser Creek, Rock Spring and Long Ridge Pastures would occur during the hot season, however, most of riparian and wetland zones are protected from grazing due to the riparian exclosure on Riser Creek. The current grazing system (proposed action) incorporates these strategies and is demonstrating improvements in riparian conditions. Improvement in riparian condition should result in improved water quality.

4.1.11 Wildlife

Mule Deer

The proposed season of use and utilization levels should at a minimum, maintain mule deer habitat quality and most likely would result in improvement. It is anticipated that the proposed grazing regime would allow the re-establishment and spread of native plant species, primarily grasses and forbs, throughout the Washburn Allotment. This is due to the fact that periodic rest would allow for increased plant vigor and production. An improvement in plant species diversity would enhance mule deer habitat.

Pronghorn Antelope

The discussion on mule deer is applicable to pronghorns with regard to grazing season of use and utilization levels. Improved species diversity would enhance pronghorn habitat, since they prefer habitats with a diversity of grasses, forbs and shrubs.

4.2 Alternative 1. No Action Alternative (1994 FMUD)

4.2.1 Cultural Resources

If the no action is selected there would be no new direct impacts to cultural resources, however, riparian zones and springs would remain static, instead of improving under this alternative and the potential to impact cultural resources will continue as they become exposed by erosion and localized trampling.

4.2.2 Invasive, Non-Native Species

Impacts would be greater than those described for the proposed action. Riparian zones would remain static instead of improving and therefore the potential for weeds to spread into the riparian areas is greater.

4.2.3 Migratory Birds

Impacts to migratory bird habitat would be greater than the proposed action, since riparian areas are not expected to improve under this alternative. The No Action Alternative would not allow all habitats to meet or make significant progress towards meeting the Standards.

4.2.4 Socio-Economics

The No Action Alternative would have no economic impact on the permittee. The grazing permit would be reissued.

4.2.5 Soils

The winter pasture is grazed outside the critical growth period. The Mentaberry East pasture is grazed on a four year cycle; prior to the critical growth period, rested, prior to the critical growth period, and after the critical growth period. Mentaberry West pasture is grazed during the early critical growth period followed by a year of rest. Washburn Seeding is grazed for two years followed by one year rest. The Riser Creek, Rock Spring, and Long Ridge pastures are in a three pasture summer rest rotation grazing system; late critical growth period, after critical growth period, and rested. The Mud Springs pasture is grazed outside the critical growth period for two consecutive years and then rested for two years. This proposal allows key plant species to complete their life cycle periodically increasing plant vigor, cover, productivity and diversity. Soil processes would be improved for upland soil.

Biological soil crusts are least vulnerable to shearing and compressional forces from livestock grazing when soils are moist and the most vulnerable when soils are dry. The highest potential concentration of biological soil crusts is in the Long Ridge pasture. Biological soil crusts would not be maintained in Lone Ridge, Mentaberry East, and Mud Spring pastures when soils are dry. This alternative would maintain or improve soil biological crusts on the spring pastures (Winter, Mentaberry West, and Washburn Seeding) when soils are moist. The surface rock fragments in the Riser Creek and Rock Springs pastures protect the biological soil crusts.

A healthy, productive and diverse plant community is necessary to maintain and improve soil processes. This alternative would maintain and improve soil processes for the upland, but progress would not be made for the riparian soils.

4.2.6 Special Status Species

The No Action Alternative may not allow the key species to complete their physiological processes necessary for their health and maintenance. Since these key species are important to all of the special status species, there may be an incremental decline in special status species habitat.

4.2.7 Threatened and Endangered Species

LCT is the only listed species known to potentially occur on the Washburn Allotment. Recovery habitat for LCT exists within Riser, Washburn, and McDermitt creeks.

With the No Action Alternative, impacts to the LCT recovery habitat would include a) increased stream temperature due to loss of overhanging vegetation, b) increased sedimentation due to streambank and upland erosion, c) increased channel width and undercut bank habitat loss due to hoof-induced bank shearing and trampling.

4.2.8 Vegetation

This alternative allows key plant species to complete their life cycle increasing plant vigor, cover, productivity and diversity. This alternative would maintain and improve conditions for

upland vegetation. Riparian vegetation utilization objectives were exceeded in 1994, 1995, 1996, 1997, and 1998 in the Long Ridge, Rock Spring and Mentaberry West (along McDermitt Creek) pastures. Fall grazing on the Mud Spring pasture failed to improve riparian conditions. Two consecutive seasons of spring grazing with one year rest on Washburn Seeding pasture also failed to improve riparian conditions. Under this alternative, riparian condition would remain static or decline.

A healthy, productive and diverse plant community is necessary to maintain and improve vegetation conditions. This was accomplished for the upland vegetation, but progress was not being made for the riparian vegetation.

4.2.9 Water Quality (Surface and Ground)

Impacts from this alternative would be essentially the same as the Proposed Action with one difference. Given the later season of use for the Mud Springs pasture, there is less of an opportunity for the riparian plant community to respond and provide regrowth which is important for channel stability and reducing sediment production.

4.2.10 Wetlands and Riparian Zones

Riparian utilization objectives were exceeded in 1994, 1995, 1996, 1997, and 1998 in the Long Ridge, Rock Spring and Mentaberry West (McDermitt Creek) pastures resulting in decreased channel stability and increased sediment production. The riparian habitat for Little Washburn and Washburn Creeks are not at PFC. Fall grazing on the Mud Spring pasture failed to improve riparian conditions as there is less of an opportunity for the riparian plant community to respond and provide regrowth which is important for channel stability and reducing sediment production. Two consecutive seasons of spring grazing with one year rest on Washburn Seeding pasture also failed to improve riparian conditions. Lotic riparian areas outside the exclosures were not improving and properly functioning condition could not be achieved. Under this alternative, riparian condition would remain static or decline.

4.2.11 Wildlife

The No Action Alternative may not allow the key plant species to complete their physiological processes necessary for their health and maintenance. Since these key species are important to all of the wildlife species, there may be an incremental decline in wildlife habitat.

4.3 Alternative 2. No Livestock Grazing Alternative

4.3.1 Cultural Resources

The No Livestock Grazing Alternative would eliminate a source of impacts to cultural resources.

4.3.2 Invasive, Non-Native Species

Elimination of livestock grazing would not necessarily reduce the occurrence of noxious weeds in the allotment. Other multiple uses would continue to contribute to the distribution of weeds.

4.3.3 Migratory Birds

Elimination of livestock grazing may result in improved ecological condition. Improved ecological condition implies a good mix of grasses, forbs and shrubs. These vegetative components provide the diversity and structure that are important components of migratory bird habitat.

4.3.4 Socio-Economics

The No Livestock Grazing Alternative would have an impact on the permittee. There could be an impact to the local economy of McDermitt, NV, which is a small rural community dependent upon ranching and agriculture. An impact would be reduced expenditures for administration and exclosure maintenance.

4.3.5 Soils

Under the No Livestock Grazing Alternative soil process would be improved. Except in the following areas, where annual plant species dominate, these areas are expected to remain static. In areas where Sandberg bluegrass dominates the under story, nutrient cycling would remain static for many years, deep rooted perennial grasses would be slow to return or may not re-establish. Healthy, vigorous perennial under story plants would increase in the long term, but annual species would increase in the short, until vigorous root systems of the perennial plants increase reducing annual species establishment. Soil biological crusts would increase from the lack of livestock trampling.

4.3.6 Special Status Species

Under this alternative it is anticipated that ecological condition would be maintained or improved. As ecological condition improves, the health, vigor and abundance of grasses and forbs would increase. The probable increase in grasses and forbs would enhance habitat quality for all special status species. The expected improvement in riparian areas would also be beneficial to all special status species.

4.3.7 Threatened and Endangered Species

With the No Grazing Alternative, beneficial impacts to LCT recovery habitat could be expected. Stuber (1985) found that trout populations often increased in response to reduced or no grazing. Platts and Rinne (1985) found that 16 out of 16 studies demonstrated benefits to the riparian zone from eliminating grazing, and that trout populations had also increased in 12 of the 16 study sites.

4.3.8 Vegetation

Under the No Livestock Grazing Alternative, perennial plants diversity, cover, vigor and production would increase in the long term. In the short term annual species would increase and then decrease in the long term as the health, diversity, vigor, and production of the perennial vegetation increases to late ecological status.

4.3.9 Water Quality (Surface and Ground)

Under the No Livestock Grazing Alternative periodic disturbances (from cattle) within the riparian zones would not occur. As a result, the water quality of the allotment would approach its natural potential. There would be a reduced effect on the physical (sediment and temperature), biologic (bacteria and pathogens) and chemical aspects (mainly via nutrient enrichment) components of water quality.

4.3.10 Wetlands and Riparian Zones

Under the No Livestock Grazing alternative periodic disturbances and removal of vegetation from livestock would not occur. As a result, the riparian areas of the allotment could approach their natural potential.

4.3.11 Wildlife

Elimination of livestock grazing may result in improved ecological and riparian conditions. As conditions improve, the health, vigor and abundance of forage species would increase. The probable increase in grass and forb availability would enhance habitat quality.

5.0 CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) regulations that implement NEPA defines a cumulative impact as: "The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

For the purposes of this analysis, the cumulative impact assessment area, with the exception of cultural resources, includes the Basco Canyon, Lower McDermitt Creek, Lower Washburn Creek, and Upper Washburn Creek sub-watersheds (USDA 2006; Map 4). The area consists of approximately 126,755 acres of which about 120,102 acres are public lands, and 6,653 acres are private lands. The cumulative assessment area for cultural resources is the Washburn Allotment.

5.1 Past and Present Actions

On the basis of aerial photographic data, agency records and GIS analysis, the following past and present actions, which have impacted the assessment area to varying degrees, have been

identified: livestock grazing, mineral resources, transportation and access, recreation, and wildfire.

Livestock Grazing – Livestock grazing has a long history in the region dating back to the late 1800's. Today, it remains the dominant use of the cumulative impact assessment area. Throughout its history, ranching has remained a dispersed activity characterized by localized areas of more intensive use.

The grazed acreage on private holdings is not subject to administration by the Federal government. Portions of 6 different federally administered grazing allotments are also represented in the assessment area. The majority of this acreage is within the Washburn, Jordan Meadows, Zimmerman, and McDermitt Creek Allotments, with smaller parcels in the Cordero and Horse Creek Allotments (BLM 2006a).

In order to support the management of these allotments, a variety of range improvement projects have been implemented through the years. Collectively, 28 springs have been developed and 157 miles of permanent fencing (both public and private), 15 miles of water pipelines, 19 reservoirs, 13 troughs, and 17 cattleguards have been constructed in support of grazing management objectives in the assessment area (BLM 2006b, 2006c; data from private holdings are incomplete).

Mineral Resources – The assessment area, which covers part of the historic Opalite mining district, has a history of minerals activity dating to 1924 (Tingley 1998). In 1941, 1942, and 1943, the Cordero Mine was the largest producer of quicksilver (mercury) in the state of Nevada (Bailey and Phoenix 1944). Since this time, relatively little activity beyond periodic exploration activities have occurred in the assessment area.

According to BLM records, there are numerous active lode and placer mining claims within the assessment area. Of these claims, there are four notices to conduct exploration operations and there are no plans of operation to develop mines that are approved or pending (BLM 2006e).

There are five gravel/rock pits within the assessment area (BLM 2006e). Some of the gravel pits are actively used for gravel to maintain the BLM road system within the area and for public sale.

Transportation and Access – Past and present actions within the assessment area are supported by an extensive transportation system which includes approximately 271 miles of roads (BLM 2006d). Humboldt County currently maintains approximately 9 miles of paved and graveled roads, and approximately 67 miles of road in the assessment area are part of the BLM system. Approximately 196 miles of road in the area are either private unimproved roads or dirt roads and two-tracks on public lands. Most of these roads have their origin in mining exploration and ranching access and few are regularly maintained.

Within the assessment area the BLM's System Roads inventory includes six roads. Most of these roads have evolved into the BLM road system over the years as the public created their own access. The bulk of these are "resource" roads, which receive minimum maintenance, and

are typically open seasonally, receive limited traffic, and are primarily for BLM administrative use only. They are frequently classified at maintenance level 2.

The Crowley-Jordan Road 2009 is a "collector" road. It was originally constructed or improved in earlier days as evidenced by presence of installed culverts, aggregate surfacing and cut slopes greater than could have evolved from the public creating their own road by driving cross country. Collector roads normally receive the highest volume of traffic on all roads in the BLM road system. Collector roads normally serve a larger resource area and connect to larger collector roads or to county/state highways (Winnemucca RMP Analysis of Management Situation (AMS), 2005). Collector roads require the highest standards for safety, comfort, and travel time, therefore receiving the highest amount of maintenance annually; and are generally maintained at the higher Level 4 or 5 (Winnemucca RMP AMS, 2005).

Even though Crowley-Jordan Road is considered a collector road, its maintenance level is a level 3, which is a lower maintenance level than a normal collector road. Road 2009 serves as a main "collector" road for several large blocks of BLM land. It begins and ends on a State and County paved highway. However, the average daily traffic levels for that road is lower than most collector roads, thus the lower maintenance level. At some time in the future, the maintenance level may be raised as visitor use increases. Improved creek crossings and road surfacing completed to protect Threatened and Endangered fish species will also "invite" the public to the area. Greater public use will result in evolving this road to a higher maintenance level consistent with BLM Manual Direction.

Recreational Activities – Dispersed recreation occurs within the assessment area and includes, wildlife viewing, hunting, off-highway vehicle use and camping.

Wildfire – Two wildfires, one in 1985 and the other in 1999 have burned approximately 6,878 acres or about 5 percent of the assessment area (BLM 2006f). These wildfires had natural revegetation as the rehabilitation process.

5.2 Reasonably Foreseeable Future Actions

Since the life of the proposed action is ten years, this time frame is considered to be most appropriate for considering the incremental effect of reasonably foreseeable future actions. Many of the past and present actions discussed above are expected to persist through this time frame, though the relative intensity of these actions could vary depending on a variety of economic factors.

Recreational use is expected to increase as a result of population growth in the areas that surround the assessment area. Some activities such as hunting and off-road vehicle use will likely continue and/or increase over time (Winnemucca RMP AMS, 2005).

Currently there is one reasonably foreseeable fuels reduction project within the assessment area. The Lone Willow Roads Herbicide Treatment Project consists of applying herbicide to improve the current “fuelbreak” system along existing roads that cross the Crowley Creek, Jordan Meadows, and Washburn allotments.

Several small (less than five acres each) gravel prospecting sites and pits are proposed.

5.3 Cumulative Impacts to Affected Resources

Impacts associated with past, present, and reasonably foreseeable future actions are generally created by ground or vegetation-disturbing activities that effect natural and cultural resources in various ways. Of particular concern is the *accumulation* of these impacts over time. This section of the EA considers the nature of the cumulative effect and analyzes the degree to which the proposed action and alternatives contribute to the collective impact. For impacts regarding the proposed action and alternatives refer to chapter 4.

5.3.1 Cultural Resources

5.3.1.1 Impacts from Past and Present Actions

Since many Great Basin prehistoric sites are surface or near surface sites, any ground disturbing activities destroy site integrity, spatial patterning and site function. Datable organic features are either destroyed or contaminated. Previous localized grazing, range improvements, road construction/maintenance and accompanying gravel pits have caused these types of impacts to cultural resources. Looting of cultural resources has also impacted sites by removing artifacts and destroying the context of the sites.

5.3.1.2 Impacts from Reasonably Foreseeable Future Actions

A number of actions, including road construction/maintenance and gravel pits are in the planning stages, as well as on-going grazing, recreation activities and mining exploration could impact cultural resources. Improved access may cause increased looting of cultural resources. Wildfire is also a threat to historic resources and the effects of heat on obsidian artifacts is detrimental to certain dating processes. Wildfire suppression activities could also impact cultural resources by displacing artifacts and disturbing the distribution of artifacts and features across the site. The proposed fuelbreak project is not expected to impact cultural resources.

5.3.1.3 Cumulative Impact

Proposed Action (Past + Present + RFFA + Proposed Action)
The proposed action should be an incremental improvement in ecological condition over an extended period of time. Improving ecological condition implies cultural resources would not be subject to further deterioration from concentrated grazing in sensitive riparian zones.

No Action Alternative (Past + Present + RFFA + No Action Alternative)

This alternative would maintain an ecological status quo but cultural resources would continue to deteriorate in sensitive locations. Past and present impacts would still exist and future actions may incrementally impact cultural resources.

No Livestock Grazing Alternative (Past + Present + RFFA + No livestock Grazing Alternative)

This alternative should be an incremental improvement in ecological condition and eliminate one source of impacts to cultural resources.

5.3.2 Invasive, Nonnative Species

5.3.2.1 Impacts from Past and Present Actions

Ground disturbances associated with past and present actions, and impacts associated with wildfire have resulted in the expansion of invasive, non-native species. Management actions associated with these species has led to better control in some cases.

5.3.2.2 Impacts from Reasonably Foreseeable Future Actions

There would be continued problems with the spread noxious weeds, but they would be closely monitored and controlled. Mining activities are not expected to increase so no major impacts are expected from mining.

5.3.2.3 Cumulative Impact

Increases in the proliferation of invasive, nonnative species would occur if inventories are not completed and identified infestations promptly treated. Currently the cumulative impact is considered moderate.

Proposed Action (Past + Present + RFFA + Proposed Action)
There should be an incremental impact from the improvement in ecological condition over an extended period of time.

No Action Alternative (Past + Present + RFFA + No Action Alternative)
The status quo would be maintained for the uplands and improved for Riser Creek exclosure. Noxious weeds hoary cress, tall whitetop, and Russian knapweed could increase in degraded riparian areas.

No Livestock Grazing Alternative (Past + Present + RFFA + No livestock Grazing Alternative)
There should be an incremental improvement in ecological condition over an extended period of time which would allow for a decrease in the rate of spread of noxious weeds.

5.3.3 Migratory Birds

5.3.3.1 Impacts from Past and Present Actions

The loss of under story plants altered habitat and may have affected migratory bird species composition and numbers. There may be an incremental increase in species composition and numbers as ecological condition improves from improved grazing practices. Wildfires have destroyed areas of native habitat that were once available to migratory birds.

5.3.3.2 Impacts from Reasonably Foreseeable Future Actions

Future grazing practices should result in improved ecological condition which would be beneficial to migratory birds. Other actions would have small localized affects on them. Further loss of native habitat to wildfires may cause the greatest impact. The proposed fuel projects may have beneficial impacts, since they may preclude large wildfires and the associated alteration of habitat.

5.3.3.3 Cumulative Impact

Proposed Action (Past + Present + RFFA + Proposed Action)
There should be an incremental impact from the improvement in ecological condition over an extended period of time. Improving ecological condition implies improving habitat condition.

No Action Alternative (Past + Present + RFFA + No Action Alternative)
The status quo would be maintained for upland ecological condition. Improvement of riparian condition in the Riser Creek exclosure is expected. The anticipated decline in condition of the other riparian areas would impact migratory birds.

No Livestock Grazing Alternative (Past + Present + RFFA + No livestock Grazing Alternative)
There should be an incremental improvement in ecological condition over an extended period of time, albeit at a faster rate than under the proposed action. Improving ecological condition implies improving habitat condition.

5.3.4 Soils, Vegetation and Wetland/Riparian Zones

5.3.4.1 Impacts from Past and Present Actions

In the past, livestock grazing has contributed to significantly impacting the soil resource. In the past, the soil tolerance was exceeded and the soil medium for plant growth was not maintained. The present grazing system has reduced past soil impacts and improved current soil resource conditions for the uplands.

In the past, livestock grazing activities had significant impacts to the vegetation resources within the impact assessment area by eliminating or greatly reducing the primary under story plants. Cheatgrass was introduced into the area in the early 1900's. The present actions of implementing livestock grazing systems has reduced past impacts and improved vegetation under story conditions. The primary successional under story plants species are slowly returning and vegetation conditions are improving, but may never be able to return to their potential.

In the past, livestock grazing has contributed to significantly impacting wetland and riparian zones. Wetland and riparian zones declined, riparian vegetation was insufficient to dissipate energy and filter sediment increasing erosion and destabilizing streambanks and meadows. Destabilization of streams and meadows resulted in incised channels and gullies resulting in lowered water table. The present actions of implementing livestock grazing systems and exclosures have reduced past impacts and improved wetland and riparian zones.

5.3.4.2 Impacts from Reasonably Foreseeable Future Actions

Future activities from livestock grazing, mining, recreation, road construction and maintenance, and vegetation projects would continue to slightly impact the soils within the impact assessment area. Impacts from grazing are likely to change and continue to improve from present conditions. Impacts from recreation and road construction or maintenance would slightly increase from the past and present conditions. Impacts from implementation of Lone Willow Fuels Project would increase short term impacts to soil resources, but would be a benefit in the long term.

Future vegetation projects are anticipated to have a low effect on the vegetation resources within the impact assessment area. Impacts from grazing are likely to improve slowly from present conditions. Recreational uses, mining, vegetation projects, and road construction/maintenance may increase and cause low impacts to vegetation resources in the foreseeable future. Impacts from implementation of Lone Willow Fuels Project would increase short term impact to vegetation resources but would improve vegetation resources in the long term. Material pits would have a minimal impact on the vegetation; these projects would be reclaimed on cessation of the material pits.

Future activities from livestock grazing, mining, recreation, road construction and maintenance, and vegetation projects would continue to slightly impact the wetland and riparian zones within the impact assessment area. Impacts from grazing are likely to change and continue to improve from present conditions. Impacts from recreation and road construction or maintenance would slightly increase from the past and present conditions.

5.3.4.3 Cumulative Impact

Proposed Action (Past + Present + RFFA + Proposed Action)
There should be an incremental impact from the improvement in ecological condition over an extended period of time.

No Action Alternative (Past + Present + RFFA + No Action Alternative)
The status quo would be maintained for the upland sites and improved for the Riser Creek exclosure. Riparian soils and riparian vegetation would decline, riparian vegetation would be insufficient to dissipate energy and filter sediment increasing erosion and destabilizing streambanks, destabilization of streambanks and meadows would result in incised channels or gullies lowering the water table.

No Livestock Grazing Alternative (Past + Present + RFFA + No livestock Grazing Alternative)
There should be an incremental improvement in ecological condition over an extended period of time, albeit at a faster rate than under the proposed action.

5.3.5 Special Status Species

5.3.5.1 Impacts from Past and Present Actions

The loss of under story plants altered habitat and may have affected special status species composition and numbers. There may be an incremental increase in species composition and numbers as ecological condition improves from improved grazing practices. Wildfires have destroyed areas of native habitat that were once available to special status species.

5.3.5.2 Impacts from Reasonably Foreseeable Future Actions

Future grazing practices should result in improved ecological condition which would be beneficial to special status species. Other actions would have small localized affects on them. Further loss of native habitat to wildfires may cause the greatest impact. The proposed fuel projects may have beneficial impacts, since they may preclude large wildfires and the associated alteration of habitat.

5.3.5.3 Cumulative Impact

Proposed Action (Past + Present + RFFA + Proposed Action)
There should be an incremental impact from the improvement in ecological condition over an extended period of time. Improving ecological condition implies improving habitat condition.

No Action Alternative (Past + Present + RFFA + No Action Alternative)
The status quo would be maintained for upland ecological condition. Improvement of riparian condition in the Riser Creek exclosure is expected. The anticipated decline in condition of the other riparian areas would impact special status species.

No Livestock Grazing Alternative (Past + Present + RFFA + No livestock Grazing Alternative)
There should be an incremental improvement in ecological condition over an extended period of time, albeit at a faster rate than under the proposed action. Improving ecological condition implies improving habitat condition.

5.3.6 Threatened and Endangered Species

5.3.6.1 Impacts from Past and Present Actions

Past actions have caused significant impacts to fishery habitats from livestock grazing. The impacts to the fishery habitats from these past actions, in general, include: loss of streamside vegetation, increased sedimentation, increased stream channel width, and loss of undercut streambank habitat. The present actions included implementation of the Riser Creek exclosure and development of a grazing system to improve riparian conditions.

5.3.6.2 Impacts from Reasonably Foreseeable Future Actions

The expected impacts to the fishery habitat are expected to be less than the past and present actions but may include: relative gain of streamside vegetation, reduced sedimentation, reduced

stream channel width, and reduction in loss of undercut streambank habitat. An attempt to reduce these impacts would be made through mitigation measures such as; changes in management, exclosures, fences, watering facilities, best management practices for road construction/maintenance and streambank vegetation utilization measures. If road construction activity increases, then impacts to fishery habitat may increase slightly in sedimentation and loss of streamside vegetation, depending upon the amount of road/stream crossings.

5.3.6.3 Cumulative Impact

Proposed Action (Past + Present + RFFA + Proposed Action)
There should be an incremental improvement in ecological condition over an extended period of time.

No Action Alternative (Past + Present + RFFA + No Action Alternative)
The stream habitat condition would continue to improve within the Riser Creek Exclosure, but not at the watergaps. The expected decline in condition of the other riparian areas may degrade recovery habitat for LCT.

No Livestock Grazing Alternative (Past + Present + RFFA + No livestock Grazing Alternative)
There should be an incremental improvement in ecological condition over an extended period of time, albeit at a faster rate than under the proposed action.

5.3.7 Water Quality (Surface and Ground)

5.3.7.1 Impacts from Past and Present Actions

Past grazing activity has impacted springs and creeks from trampling, punching and defecation. Short term impacts to water quality have resulted from fires. Past impacts from mining and transportation activities include alteration of drainage patterns and increased sediment production.

5.3.7.2 Impacts from Reasonably Foreseeable Future Actions

Impacts to water quality would be similar to those previously described under section 4.1.9, but at differing rates of intensities. Impacts resulting from future OHV, transportation and minerals activities would be primarily in the form of sedimentation and alterations of stream channel morphology. The rates at which this occurs is expected to decrease through the application of best management practices. Impacts to water quality from an anticipated increase in wildland fire activity would occur from decreases in watershed stability leading to additional erosion and sedimentation, the affects of which would be somewhat mitigated by the proposed Lone Willow Fuel Break project. Impacts to water quality (similar to those described under section 4.1.9) would also occur but may be reduced as grazing systems are re-evaluated and improved.

5.3.7.3 Cumulative Impact

Proposed Action (Past + Present + RFFA + Proposed Action)
There should be an incremental improvement to water quality from the proposed action over time, as a direct result of the improvement in riparian area condition and improving ecological conditions of the watersheds over an extended period of time.

No Action Alternative (Past + Present + RFFA + No Action Alternative)

Impacts to water quality (in the immediate area) would continue. Riparian areas would not continue to improve and would most likely revert to a "functioning-at-risk" status. This would result primarily from the return to rotated hot season use and reinstituting the additional fall use in the Mud Springs Pasture. Riser Creek would most likely continue in its present state due to the presence of the existing exclosure fence.

No Livestock Grazing Alternative (Past + Present + RFFA + No livestock Grazing Alternative)

There should be an incremental improvement in ecological condition over an extended period of time, but it would most likely occur quicker than then the forecasted improvement associated with the proposed action.

5.3.8 Wildlife

5.3.8.1 Impacts from Past and Present Actions

The loss of under story plants altered habitat and may have affected wildlife species composition and numbers. There may be an incremental increase in species composition and numbers as ecological condition improves from improved grazing practices. Wildfires have destroyed areas of native habitat that were once available to wildlife species.

5.3.8.2 Impacts from Reasonably Foreseeable Future Actions

Future grazing practices should result in improved ecological condition which would be beneficial to wildlife species. Other actions would have small localized effects on them. Further loss of native habitat to wildfires may cause the greatest impact. The proposed fuel projects may have beneficial impacts, since they may preclude large wildfires and the associated alteration of habitat.

5.3.8.3 Cumulative Impact

Proposed Action (Past + Present + RFFA + Proposed Action)
There should be an incremental impact from the improvement in ecological condition over an extended period of time. Improving ecological condition implies improving habitat condition.

No Action Alternative (Past + Present + RFFA + No Action Alternative)
The status quo would be maintained for upland ecological condition. Improvement of riparian condition in the Riser Creek exclosure is expected. The anticipated decline in condition of the other riparian areas would impact wildlife species.

No Livestock Grazing Alternative (Past + Present + RFFA + No livestock Grazing Alternative)
There should be an incremental improvement in ecological condition over an extended period of time, albeit at a faster rate than under the proposed action. Improving ecological condition implies improving habitat condition.

6.0 MONITORING AND MITIGATION MEASURES

Rangeland monitoring would be conducted by BLM Specialists based on Winnemucca District priorities. Specific rangeland monitoring studies may include cover studies, ecological condition studies, key forage plant method utilization transects, Cole browse, use pattern mapping, frequency trend, or observed apparent trend. The permittee would be encouraged to participate in monitoring. Noxious weed detection would be incorporated into monitoring activities.

Appropriate monitoring has been included in the proposed action. No additional monitoring has been proposed as a result of the analysis of the potential impacts.

7.0 LIST of PREPARERS (Assigned ID Team)

Jonathan Sheeler .....Rangeland Management Specialist/Project Lead
Derek Messmer ..... Noxious Weeds/Invasive Species
Ken Detweiler ..... Special Status Species /Migratory Birds/Wildlife
Regina Smith.....Cultural Resources/Native American Religious Concerns
Mike Zielinski..... Vegetation/Soils/Wetland-Riparian Zones
Craig Drake..... Hydrologist
Amanda DeForest .....Supervisory Rangeland Management Specialist
Greg Lynch ..... Fisheries Biologist
Lynn Ricci..... Environmental Coordinator

8.0 CONSULTATION and COORDINATION

The Winnemucca Field Office mails an annual Consultation, Cooperation, and Coordination (CCC) Letter to individuals and organizations that have expressed an interest in rangeland management related actions. Those receiving the annual CCC letter have the opportunity to request from the Field Office more information regarding specific actions. The following individuals/organizations have requested information on all actions regarding rangeland management in the Washburn Allotment and are thus considered "interested publics."

NDOW Fallon
Western Watershed Project
State of Nevada – Department of Administration
Humboldt County Commissioners

NDOW Winnemucca
Nevada Cattlemen's Association
Nevada Woolgrower's Association
NRCS Winnemucca
John Falen
RCI
Ft. McDermitt Tribal Council
Nevada Lands and Resources Company

9.0 REFERENCES

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2006 Winnemucca Resource Management Plan Socioeconomic Report

2006a Grazing Allotments GIS layer, Winnemucca Field Office

2006b Range Improvement Lines GIS layer, Winnemucca Field Office

2006c Range Improvement Points GIS layer, Winnemucca Field Office

2006d Roads GIS layer, Winnemucca Field Office

2006e Legacy Rehost (LR) 2000 database

2006f Fire History GIS layer, Winnemucca Field Office

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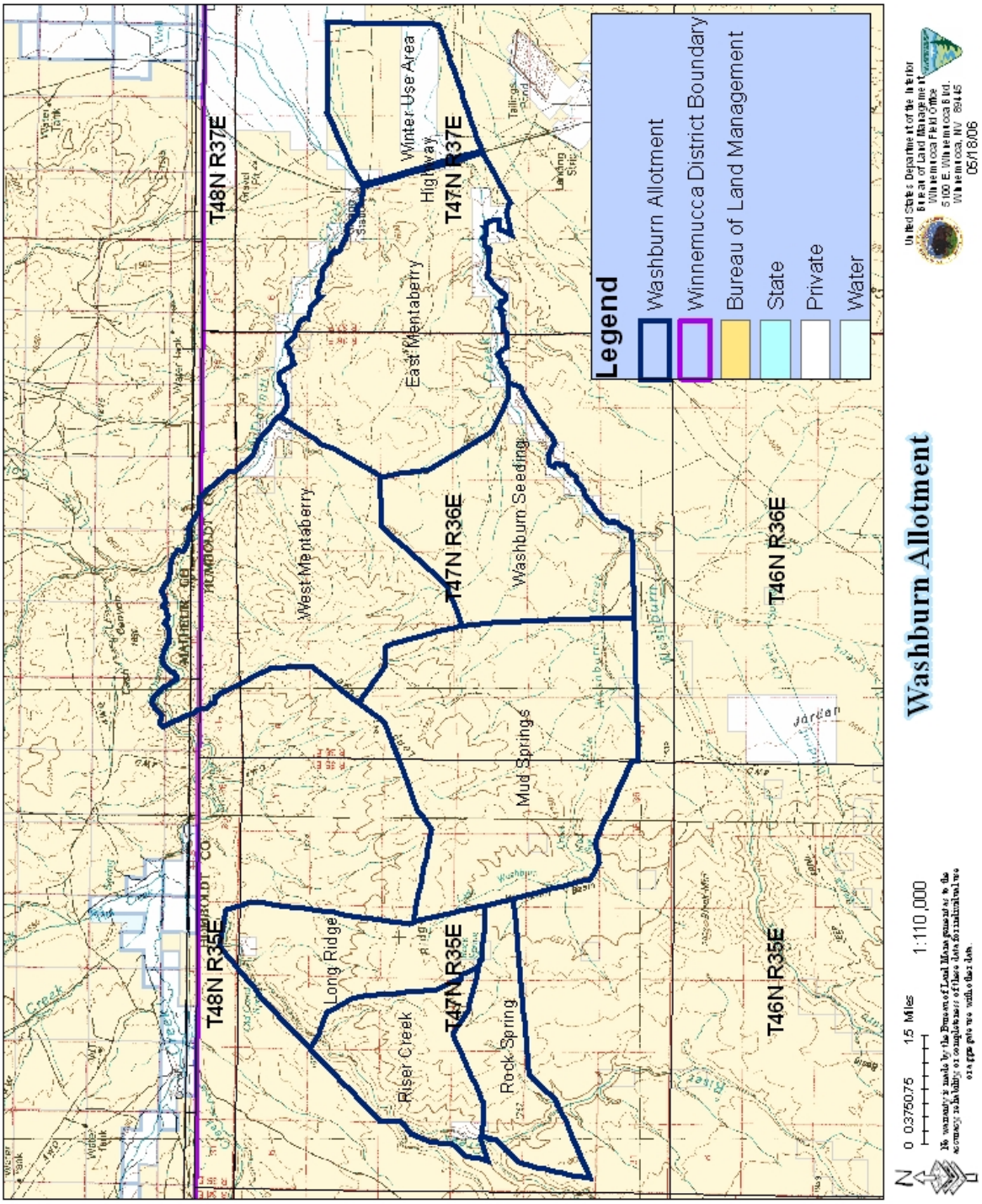
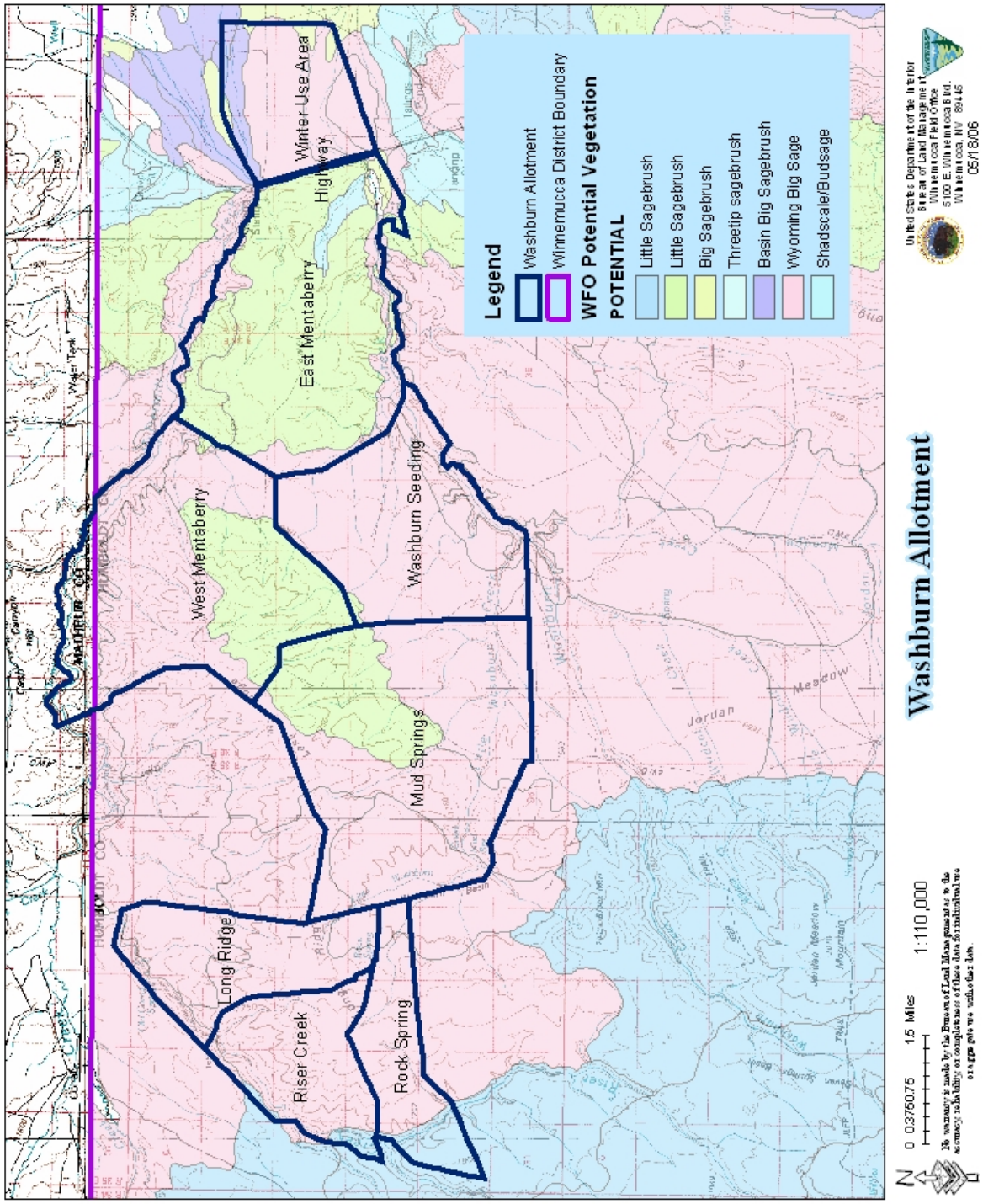
10.0 APPENDICES

Map 1. Washburn Allotment Base Map
Map 2. Dominant Potential Vegetation
Map 3. Soils
Map 4. Slope
Map 5. Water Erosion Potential
Map 6. Wind Erosion Potential
Map 7. ReGap Data
Map 8. Cumulative Impact Assessment Area

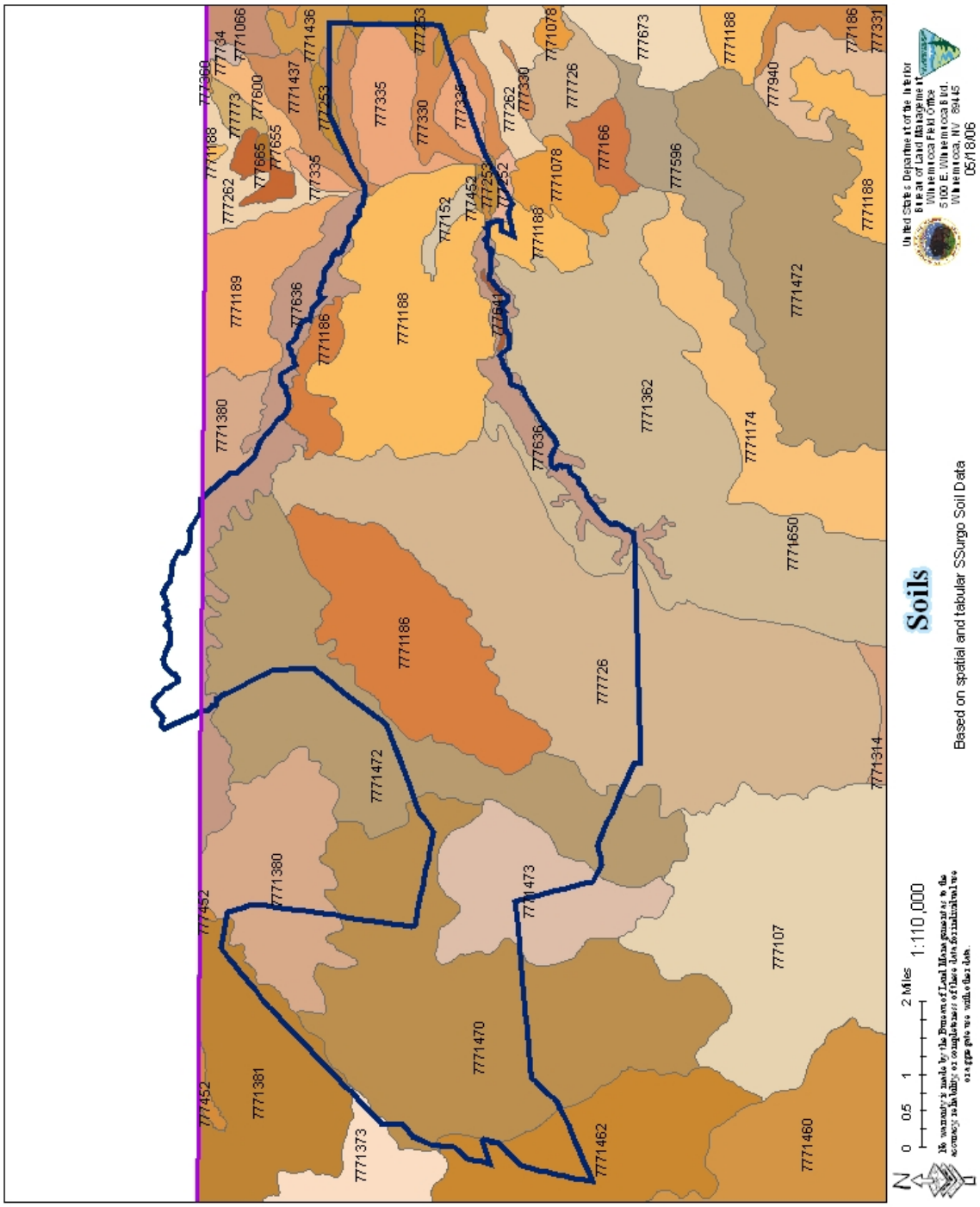
Map 1. Washburn Allotment Base Map



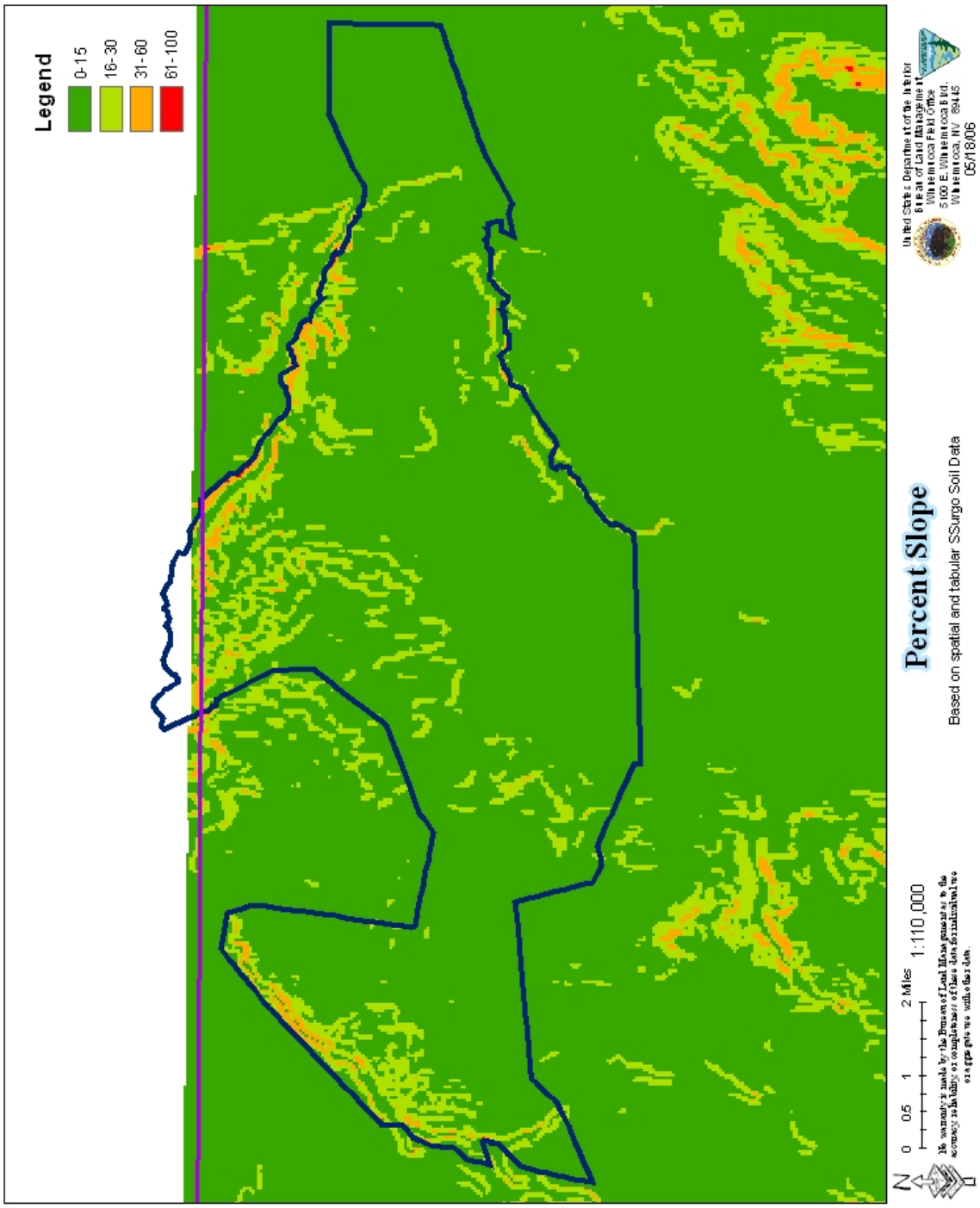
Map 2. Dominant Potential Vegetation



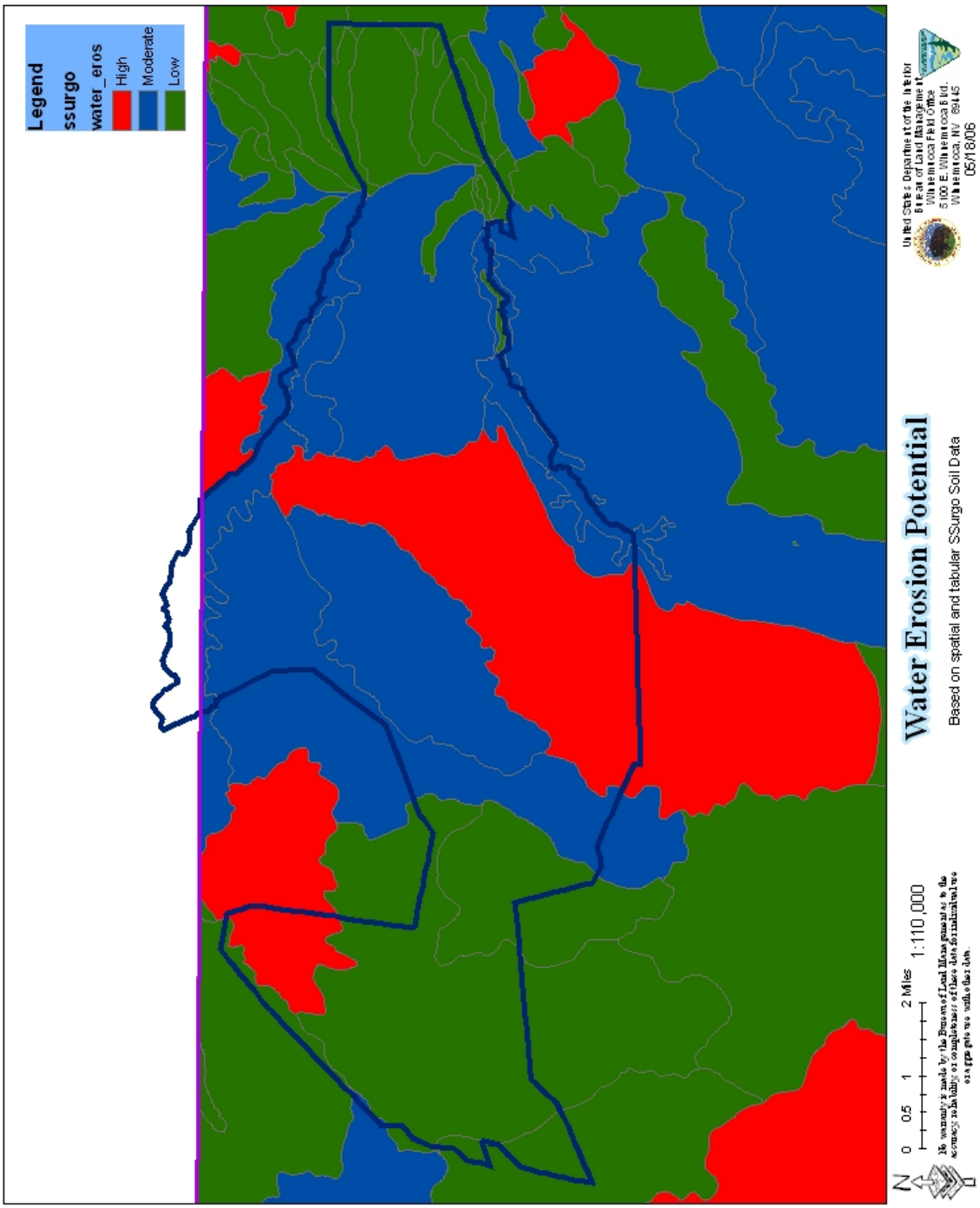
Map 3. Washburn Allotment Soil Map Units



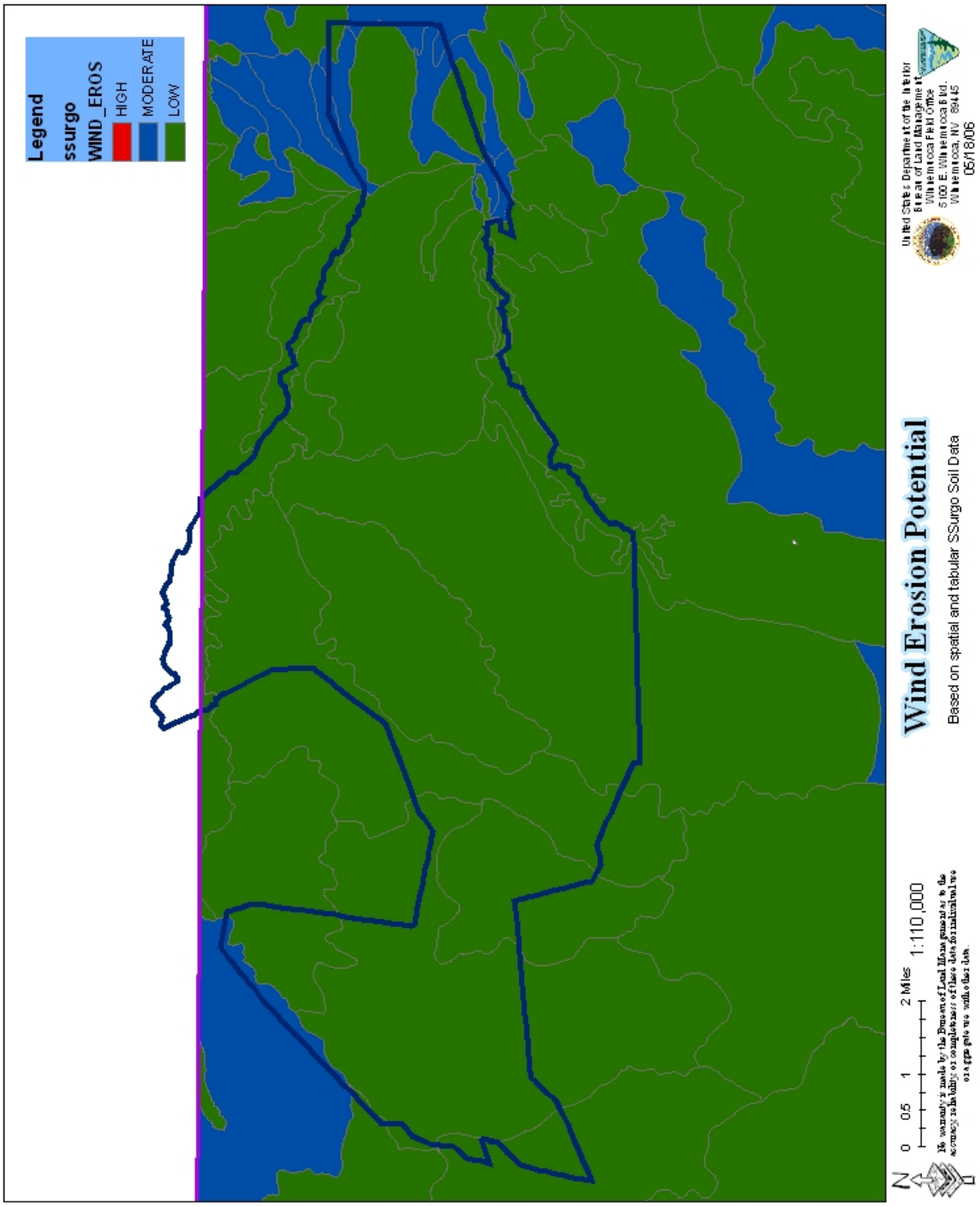
Map 4. Washburn Allotment Slope



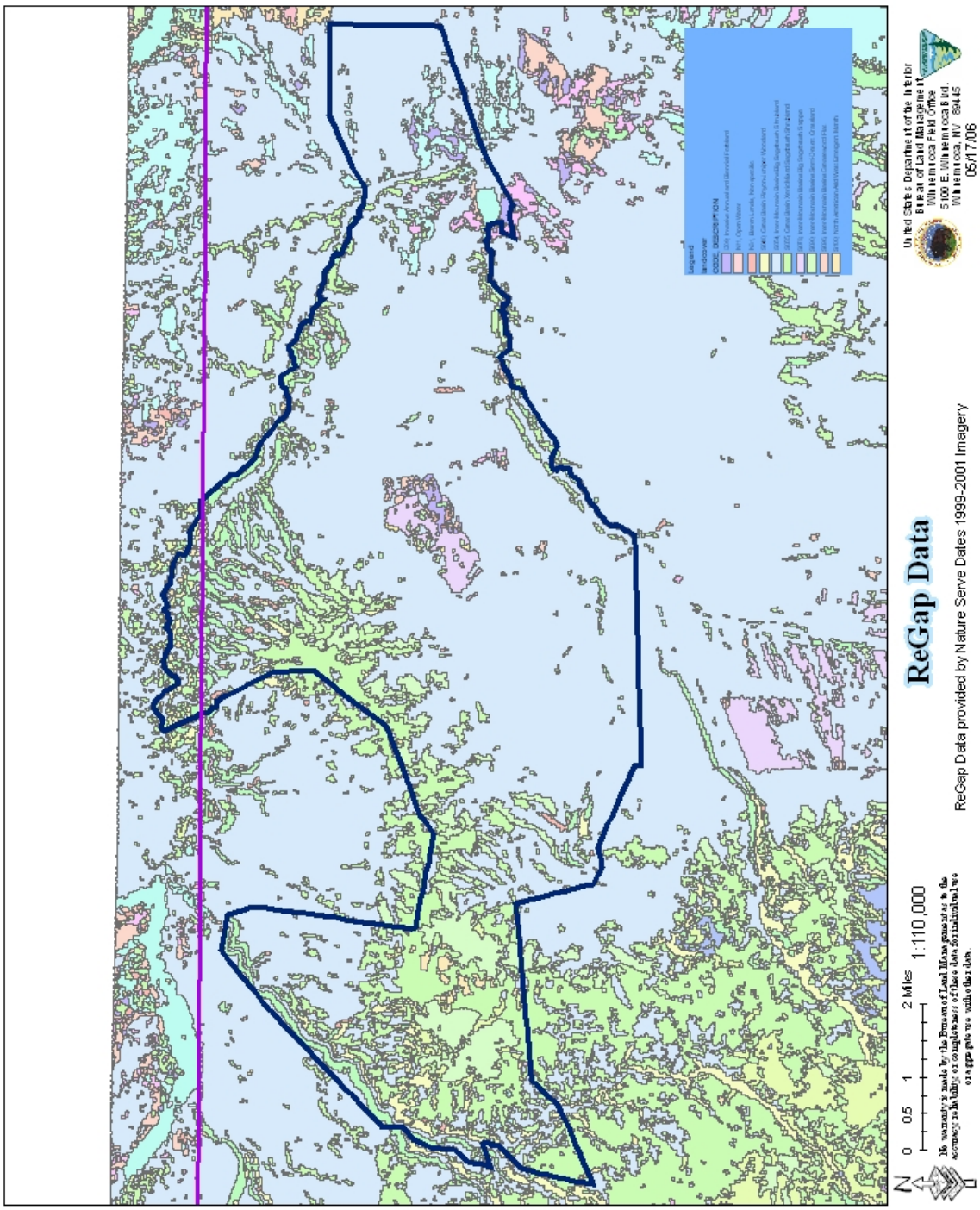
Map 5. Water Erosion Potential



Map 6. Wind Erosion Potential



Map 7. Washburn Re-Gap Data



Map 8. Cumulative Impact Assessment Area